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New Series.

JANUARY, 1912.

VOL. 7. NO. 1.

# MONTHLY BULLETIN

OF THE

## STATE BOARD OF HEALTH

OF

### MASSACHUSETTS:

---

An official publication of the State Board of Health of Massachusetts, issued monthly from the office of the Board, 145 State House, Boston, Mass.

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STATE HOUSE, BOSTON.

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8796 1912

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

A  
WEEK ENDING JAN. 6, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal In- fectious Dis- eases.	Tu- berculosis, Pulmonary, (or n't classified.)	Acute Lung Diseases.	Tu- berculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	208	48	68	36	13	4	7	-	1	3
Worcester, .	145,986	45	10	15	9	2	-	-	-	1	-
Fall River, .	119,295	28	10	12	4	3	-	-	-	-	-
Lowell, .	106,294	32	13	14	11	2	-	-	-	-	-
Cambridge, .	104,839	29	8	13	5	6	-	-	-	-	-
New Bedford, .	96,652	39	12	16	7	4	-	-	-	-	-
Lynn, .	89,336	31	4	8	2	3	-	-	-	-	-
Springfield, .	88,926	24	7	11	8	-	-	2	-	-	-
Lawrence, .	85,892	21	10	10	8	-	-	-	-	-	-
Somerville, .	77,236	16	-	4	1	3	-	-	-	-	-
Holyoke, .	57,730	8	1	2	-	1	-	-	-	-	-
Brockton, .	56,878	16	4	4	2	1	1	-	-	-	-
Malden, .	44,404	5	2	2	2	-	-	-	-	-	-
Haverhill, .	44,115	15	3	7	4	-	-	-	-	-	-
Salem, .	43,697	9	1	3	2	-	-	-	-	-	-
Newton, .	39,806	10	2	1	1	-	-	-	-	-	-
Fitchburg, .	37,826	5	2	2	1	-	-	-	-	-	-
Taunton, .	34,259	15	4	4	3	-	-	-	-	-	-
Everett, .	33,484	8	2	1	1	-	-	-	-	-	-
Quincy, .	32,642	8	3	5	3	-	-	-	-	-	-
Chelsea, .	32,452	6	-	1	1	-	-	-	-	-	-
Pittsfield, .	32,121	14	4	3	1	1	-	-	-	-	-
Waltham, .	27,834	10	3	4	4	-	-	-	-	-	-
Brookline, .	27,792	12	-	4	4	-	-	-	-	-	-
Chicopee, .	25,401	7	1	4	2	-	-	-	-	-	-
Gloucester, .	24,398	6	-	1	-	-	-	-	-	-	-
Medford, .	23,150	2	-	-	-	-	-	-	-	-	-
North Adams, .	22,019	4	1	1	-	-	-	-	-	-	-
Northampton, .	19,431	4	1	-	-	-	-	-	-	-	-
Beverly, .	18,650	5	-	1	1	1	-	-	-	-	-
Revere, .	18,219	4	2	1	1	1	-	-	-	-	-
Leominster, .	17,580	3	-	-	-	-	-	-	-	-	-
Attleborough, .	16,215	4	1	-	-	-	-	-	-	-	-
Westfield, .	16,044	6	1	4	-	-	-	1	-	-	-
Peabody, .	15,721	3	0	-	-	-	-	-	-	-	-
Melrose, .	15,715	5	-	2	1	1	-	-	-	-	-
Woburn, .	15,308	6	1	2	1	1	-	-	-	-	-
Newburyport, .	14,949	4	1	1	1	1	-	-	-	-	-
Gardner, .	14,699	7	2	2	2	2	-	-	-	-	-
Marlborough, .	14,579	5	1	2	2	2	-	-	-	-	-
Clinton, .	13,075	1	-	-	-	-	-	-	-	-	-
Milford, .	13,055	3	0	-	-	-	-	-	-	-	-
Adams, .	13,026	1	0	-	-	-	-	-	-	-	-
Framingham, .	12,948	4	1	3	2	-	-	-	-	-	-
Weymouth, .	12,895	-	1	-	-	-	-	-	-	-	-
Watertown, .	12,875	0	-	-	-	-	-	-	-	-	-
Southbridge, .	12,592	7	1	-	-	-	-	-	-	-	-
Plymouth, .	12,141	3	1	-	-	-	-	-	-	-	-
Webster, .	11,509	0	0	-	-	-	-	-	-	-	-
Methuen, .	11,448	1	-	-	-	-	-	-	-	-	-
Wakefield, .	11,404	3	1	2	2	1	-	-	-	-	-
Arlington, .	11,187	5	-	1	-	-	-	-	-	-	-
Greenfield, .	10,427	2	-	1	-	-	-	-	-	-	-
Winthrop, .	10,132	1	-	1	1	1	-	-	-	-	-

*Recapitulation.*

Total of report- ing towns	2,593,485	720	169	242	137	48	12	15	5	2	5	-
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WEEK ENDING JAN. 13, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (r n o' c l classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	229	49	85	41	25	—	—	3	—	3
Worcester, .	145,986	47	16	19	14	5	—	—	—	—	—
Fall, River, .	119,295	41	16	22	12	4	—	—	—	—	—
Lowell, .	106,294	45	11	20	14	2	—	—	2	1	—
Cambridge, .	104,839	21	4	9	6	2	—	—	1	1	—
New Bedford .	96,652	37	14	17	7	2	—	—	—	—	1
Lynn, .	89,336	21	5	4	4	—	—	—	—	—	—
Springfield, .	88,926	35	9	7	4	2	—	—	—	—	—
Lawrence, .	85,892	21	7	9	5	1	—	—	—	—	1
Somerville, .	77,236	16	—	3	2	1	—	—	—	—	—
Holyoke, .	57,730	14	4	5	3	2	—	—	—	—	—
Brockton, .	56,878	20	5	6	4	1	—	—	—	—	—
Malden, .	44,404	13	4	4	2	1	—	—	—	—	—
Haverhill, .	44,115	15	2	4	2	1	—	—	1	—	—
Salem, .	43,697	10	3	3	3	—	—	—	—	—	—
Newton, .	39,806	10	3	—	3	—	—	—	—	—	—
Fitchburg, .	37,826	8	1	3	2	—	—	—	1	—	—
Taunton, .	34,259	17	5	6	2	2	—	—	—	—	—
Everett, .	33,484	4	1	2	2	—	—	—	—	—	—
Quincy, .	32,642	6	1	1	4	1	—	—	—	—	—
Chelsea, .	32,452	18	6	7	4	1	—	—	1	1	—
Pittsfield, .	32,121	12	—	3	1	2	—	—	—	—	—
Waltham, .	27,834	11	1	4	3	—	—	1	—	—	—
Brookline, .	27,792	7	—	3	2	1	—	—	—	—	—
Chicopee, .	25,401	9	3	3	1	2	—	—	—	—	—
Gloucester, .	24,398	10	1	—	3	—	—	—	—	—	—
Medford, .	23,150	6	—	—	2	1	—	—	—	—	—
North Adams, .	22,019	5	2	5	2	1	—	1	—	—	—
Northampton, .	19,431	8	2	—	1	3	—	—	—	—	—
Beverly, .	18,650	8	1	—	1	—	—	—	—	1	—
Revere, .	18,219	3	—	2	1	1	—	—	—	—	—
Leominster, .	17,580	8	1	2	1	1	—	—	—	—	—
Attleborough, .	16,215	4	1	2	1	1	—	—	—	—	—
Westfield, .	16,044	6	—	5	1	3	—	—	1	—	—
Peabody, .	15,721	1	1	1	—	—	—	—	—	—	—
McLrose, .	15,715	4	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	5	0	3	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	4	2	—	—	—	—	—	—	—	—
Marlborough, .	14,579	7	0	—	—	—	—	—	—	—	—
Clinton, .	13,075	4	1	1	—	—	—	—	—	—	—
Milford, .	13,055	6	0	2	—	—	—	—	—	—	—
Adams, .	13,026	2	0	—	2	—	—	—	—	—	—
Framingham, .	12,948	8	2	2	1	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	0	—	—	—	—	—	—	—	—
Southbridge, .	12,592	4	1	1	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—
Webster, .	11,509	1	1	—	1	—	—	—	—	—	—
Methuen, .	11,448	1	—	—	1	1	—	—	—	—	1
Wakefield, .	11,404	3	—	—	2	—	—	2	—	—	—
Arlington, .	11,187	5	—	—	1	—	—	1	—	—	—
Greenfield, .	10,427	3	—	—	2	—	—	—	—	—	—
Winthrop, .	10,132	5	—	—	1	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	817	187	285	149	71	15	11	5	2	3	4
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WEEK ENDING JAN. 20, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or non-classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	268	63	91	43	28	3	4	1	—	1
Worcester, .	145,986	37	9	12	11	1	—	—	—	—	—
Fall River, .	119,295	47	17	18	9	3	—	—	—	—	—
Lowell, .	106,294	43	17	14	10	2	—	—	—	—	—
Cambridge, .	104,839	35	9	18	10	6	—	—	—	—	—
New Bedford, .	96,652	35	6	10	5	4	—	—	—	—	—
Lynn, .	89,336	33	9	4	4	—	—	—	—	—	—
Springfield, .	88,926	22	5	6	4	—	—	—	—	—	—
Lawrence, .	85,892	24	8	6	4	2	—	—	—	—	—
Somerville, .	77,236	28	—	4	2	2	—	—	—	—	—
Holyoke, .	57,730	13	6	5	4	1	—	—	—	—	—
Brockton, .	56,878	15	3	5	3	2	—	—	—	—	—
Malden, .	44,404	8	—	3	3	1	—	—	—	—	—
Haverhill, .	44,115	18	5	7	3	1	—	—	—	—	—
Salem, .	43,697	13	3	3	2	2	—	—	—	—	—
Newton, .	39,806	11	1	2	1	1	—	—	—	—	—
Fitchburg, .	37,826	11	2	3	2	1	—	—	—	—	—
Taunton, .	34,259	13	2	2	1	1	—	—	—	—	—
Everett, .	33,484	9	—	5	4	1	—	—	—	—	—
Quincy, .	32,642	9	1	2	2	2	—	—	—	—	—
Chelsea, .	32,452	18	5	7	6	6	—	—	—	—	—
Pittsfield, .	32,121	6	—	3	2	2	1	—	—	—	—
Waltham, .	27,834	8	0	4	2	—	—	4	—	—	—
Brookline, .	27,792	10	3	2	2	2	—	—	—	—	—
Chicopee, .	25,401	8	4	3	1	1	—	—	—	—	—
Gloucester, .	24,398	7	—	—	—	—	—	—	—	—	—
Medford, .	23,150	8	3	3	2	2	—	—	—	—	—
North Adams, .	22,019	10	1	2	2	2	—	—	—	—	—
Northampton, .	19,431	8	1	3	1	1	—	—	—	—	—
Beverly, .	18,650	3	1	—	—	—	—	—	—	—	—
Revere, .	18,219	3	1	1	1	1	—	—	—	—	—
Leominster, .	17,580	4	2	2	1	1	—	—	—	—	—
Attleborough, .	16,215	5	1	3	1	1	—	—	—	—	—
Westfield, .	16,044	—	—	—	—	—	—	—	—	—	—
Peabody, .	15,721	6	1	1	2	2	—	—	—	—	—
Melrose, .	15,715	3	1	—	—	—	—	—	—	—	—
Woburn, .	15,308	7	1	2	2	2	1	—	—	—	—
Newburyport, .	14,949	5	1	2	1	2	—	—	—	—	—
Gardner, .	14,699	4	1	—	—	—	—	—	—	—	—
Marlborough, .	14,579	5	0	1	—	—	—	—	—	—	—
Clinton, .	13,075	11	2	2	1	1	—	—	—	—	—
Milford, .	13,055	5	2	—	—	—	—	—	—	—	—
Adams, .	13,026	7	0	1	1	1	—	—	—	—	—
Framingham, .	12,948	5	1	1	1	1	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	1	1	1	1	—	—	—	—	—
Southbridge, .	12,592	—	—	1	—	—	—	—	1	—	—
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—
Webster, .	11,509	1	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	1	1	—	—	—	—	—	—	—	—
Greenfield, .	10,427	6	1	—	—	—	—	—	—	—	—
Winthrop, .	10,132	0	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,577,441	866	202	266	150	66	16	5	3	-	2	3
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WEEK ENDING JAN. 27, 1912.

CITIES AND TOWNS. <sup>1</sup>	Population, Census for 1910.			Deaths under Five Years.	DEATHS FROM —							
		Reported Deaths in Each.	Principal Infectious Diseases.		Acute Lung Diseases.	Tuberculosis, Pu. Lmonary, (or non-classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	233	49	76	36	21	3	8	1	—	1	1
Worcester, .	145,986	43	8	19	15	4	—	—	—	—	—	1
Fall River, .	119,295	39	18	17	10	2	—	3	—	—	—	1
Lowell, .	106,294	50	13	16	11	3	—	—	—	—	—	—
Cambridge, .	104,839	33	12	16	9	2	—	—	—	—	—	—
New Bedford, .	96,652	28	8	6	2	2	—	—	—	—	—	—
Lynn, .	89,336	20	5	4	2	—	—	—	—	—	—	—
Springfield, .	88,926	28	4	8	7	3	—	—	1	—	—	—
Lawrence, .	85,892	24	—	8	3	—	—	—	2	—	—	—
Somerville, .	77,236	24	6	4	2	2	—	—	—	—	—	—
Holyoke, .	57,730	14	7	5	3	1	—	—	—	—	—	—
Brookton, .	56,878	15	4	8	5	1	—	—	—	—	—	—
Malden, .	44,404	11	2	3	1	—	—	—	—	—	—	—
Haverhill, .	44,115	23	4	7	4	3	—	—	—	—	—	—
Salem, .	43,697	13	4	5	4	1	—	—	—	—	—	—
Newton, .	39,806	8	2	5	4	1	—	—	—	—	—	—
Fitchburg, .	37,826	15	5	1	—	1	—	—	—	—	—	—
Taunton, .	34,259	15	6	5	2	—	—	—	—	—	—	—
Everett, .	33,484	8	1	2	1	—	—	—	—	—	—	—
Quincy, .	32,642	9	3	3	2	—	—	—	—	—	—	—
Chelsea, .	32,452	10	1	3	1	—	—	—	—	—	—	—
Pittsfield, .	32,121	11	3	1	1	—	—	—	—	—	—	—
Waltham, .	27,834	8	0	2	1	—	—	—	—	—	—	—
Brookline, .	27,792	6	—	3	3	—	—	—	—	—	—	—
Chicopee, .	25,401	3	2	1	—	—	—	—	—	—	—	—
Gloucester, .	24,398	4	1	2	—	—	—	—	—	—	—	—
Medford, .	23,150	8	1	1	1	—	—	—	—	—	—	—
North Adams, .	22,019	6	2	2	1	—	—	—	—	—	—	—
Northampton, .	19,431	8	1	3	1	—	—	—	1	—	—	—
Beverly, .	18,650	0	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	2	1	—	2	—	—	—	—	—	—	—
Leominster, .	17,580	4	2	—	1	—	—	—	—	—	—	—
Attleborough, .	16,215	6	0	—	4	3	—	—	—	—	—	—
Westfield, .	16,044	3	—	1	—	—	—	—	—	—	—	—
Peabody, .	15,721	4	1	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	5	—	—	2	—	—	—	—	—	—	—
Woburn, .	15,308	5	0	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	2	2	—	1	1	—	—	—	—	—	—
Gardner, .	14,699	4	—	—	1	1	—	—	—	—	—	—
Marlborough, .	14,579	7	0	—	2	—	—	—	2	—	—	—
Clinton, .	13,075	6	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	7	1	—	—	—	—	—	—	—	—	—
Adams, .	13,026	4	3	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	6	2	—	1	1	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	1	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	2	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	1	—	—	1	1	—	—	—	—	—	—
Webster, .	11,509	1	0	—	1	1	—	—	—	—	—	—
Methuen, .	11,448	3	1	—	—	—	—	—	1	—	—	—
Wakefield, .	11,404	4	2	—	1	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	3	1	—	1	1	—	—	—	—	—	—
Winthrop, .	10,132	4	1	—	1	1	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,593,485	805	194	253	145	59	9	18	3	1	2	5
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JAN. 6, 13, 20 AND 27, 1912.**

DISEASE.	Place.	WEEK ENDING —			
		Jan. 6.	Jan. 13	Jan. 20	Jan. 27.
Cerebro-spinal meningitis,	Boston, . . . . .	-	-	1	1
	Worcester, . . . . .	3	-	-	-
	Fall River, . . . . .	-	1	-	-
	Cambridge, . . . . .	-	-	1	-
	New Bedford, . . . . .	1	1	-	-
	Haverhill, . . . . .	-	-	1	-
Erysipelas, . . . . .	Boston, . . . . .	-	1	-	1
	Fall River, . . . . .	1	-	-	-
	Taunton, . . . . .	1	-	-	-
	Chelsea, . . . . .	-	-	-	1
Influenza, . . . . .	Boston, . . . . .	-	2	3	-
	Brockton, . . . . .	-	1	-	-
	Lawrence, . . . . .	-	1	-	-
	Malden, . . . . .	-	-	-	1
	Medford, . . . . .	-	-	1	-
	Northampton, . . . . .	-	2	-	-
Diarrhoeal diseases, . . . . .	Boston, . . . . .	3	4	5	3
	Brockton, . . . . .	-	-	-	1
	Cambridge, . . . . .	-	1	1	-
	Chicopee, . . . . .	-	-	1	-
	Fall River, . . . . .	3	3	-	1
	Fitchburg, . . . . .	-	-	6	-
	Lawrence, . . . . .	-	1	-	-
	Malden, . . . . .	-	1	-	-
Puerperal fever, . . . . .	Milford, . . . . .	-	1	-	-
	New Bedford, . . . . .	3	3	-	-
	Springfield, . . . . .	1	1	-	-

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
JAN. 6, 13, 20 AND 27, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —				
	Jan. 6.	Jan. 13.	Jan. 20.	Jan. 27.	Total.
Diphtheria, . . . . .	176	126	117	100	519
Measles, . . . . .	296	311	440	421	1,468
Scarlet fever, . . . . .	149	152	130	152	583
Typhoid fever, . . . . .	28	17	14	21	80
Tuberculosis, pulmonary, (or not classified), . . . . .	140	128	102	116	486
Tuberculosis other than pulmonary, . . . . .	4	2	3	8	17
Cerebro-spinal meningitis, . . . . .	4	—	4	3	11
Meningitis other than cerebro-spinal, . . . . .	1	—	—	—	1
Whooping cough, . . . . .	139	70	121	108	438
Varicella, . . . . .	109	128	74	158	469
Ophthalmia neonatorum, . . . . .	46	32	42	49	169
Anterior poliomyelitis, . . . . .	2	—	2	—	4
Mumps, <sup>1</sup> . . . . .	1	3	5	10	19
Tetanus, . . . . .	—	3	—	—	3
Smallpox, . . . . .	1	—	2	2	5
Malaria, . . . . .	—	—	1	—	1
Trachoma, . . . . .	1	—	2	2	5
Anthrax, . . . . .	—	1	—	—	1
Erysipelas, <sup>1</sup> . . . . .	—	—	1	—	1

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

**MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.**

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The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of January, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Bread, . . .	1	-	1	Maple sugar, .	1	-	1
Butter, . . .	6	-	6	Maple syrup, .	8	5	13
Canned fruit, .	1	-	1	Meat products:—			
Cider, . . .	1	-	1	Canned meats, .	1	-	1
Cocoa, . . .	6	1	7	Hamburg steak,	2	-	2
Coffee, . . .	2	-	2	Jellied meats, .	2	-	2
Condensed milk, .	3	3	6	Mince meat, .	1	-	1
Confectionery, .	27	1	28	Sausages, . .	14	10	24
Cream, . . .	13	2	15	Milk, . . .	172	26	198
Cream of tartar, .	3	-	3	Olive oil, . . .	4	-	4
Drugs, . . .	89	19	108	Proprietary foods,	2	-	2
Fruit juice (orange), .	1	-	1	Pickles, . . .	4	2	6
Flavoring extracts:—				Shrimp, . . .	1	-	1
Lemon, . . .	3	1	4	Spices, . . .	20	-	20
Vanilla, . . .	3	1	4	Sugar, . . .	1	-	1
Honey, . . .	1	-	1	Table sauce, . .	2	1	3
Horse radish, .	2	-	2	Vinegar, . . .	23	17	40
Jams and jellies, .	2	3	5	Wine, . . .	1	1	2
Lard, . . .	1	-	1	Total, . . .	424	93	517

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.**

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Nine convictions were secured during the month of January, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Robert Bradford, . . .	Framingham,	Milk (total solids, 11.26). <sup>1</sup>
2	Thomas Bradley, . . .	Gloucester,	Milk (total solids, 10.86). <sup>2</sup>
3	Frank X. Bussiere,	Dartmouth,	Milk (total solids, 10.16). <sup>1</sup>
4	Patrick J. Dugan, . . .	Salem, . . .	Milk (total solids, 10.78). <sup>1</sup>
5	Joseph Paradis, . . .	Dartmouth,	Milk (total solids, 8.30). <sup>1</sup>
6	Arthur L. Perkins, . . .	Peabody, . . .	Milk (total solids, 10.84). <sup>1</sup>
7	Joseph Perry, . . .	Dartmouth, . . .	Milk (total solids, 10.44). <sup>1</sup>
8	Hilton E. Skerry, . . .	Lynn, . . .	Mince meat (contained benzoic acid).
9	N. E. Maple Syrup Company,	Cambridge, .	Syrup (cane syrup flavored with maple). <sup>2</sup>

<sup>1</sup> Watered.

<sup>2</sup>Appealed.

Fines imposed, \$325.

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR JANUARY, 1912.**

Number of Sample.	Character of Sample	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.	
q 8388	Borden's Peerless Evaporated Milk.	Borden Condensed Milk Company, N. Y., . . . . .	Fat, 8.10 per cent.; proteins, 7.03 per cent.; no formula giving dilution.	
q 8377	Borden's Peerless Evaporated Milk.	Borden Condensed Milk Company, N. Y., . . . . .	Fat, 6.30 per cent.; proteins, 7.20 per cent.; no formula giving dilution.	
q 8378	Borden's Peerless Evaporated Milk.	Borden Condensed Milk Company, N. Y., . . . . .	When diluted according to label gives 12.95 per cent. solids, 3.06 per cent. fat; 3.60 per cent proteins; skimmed milk.	
16177	Lemon extract, Compound extract.	Routhier & Delisle, Lowell, Mass., . . . . .	Contained 2.2 per cent. oil of lemon; lov in oil.	
16176	Vanilla.	Rochette & Delisle, Lowell, Mass., . . . . .	Contained 0.066 per cent. vanillin; 0.044 per cent. coumarin: no formula given.	
16357	Strawberry jam.	F. P. Adams & Company, Boston, Mass., . . . . .	Contained benzoic acid.	
16305	Silver Top Maraschino Cherries.	The J. I. Rheinstrom Sons Company, Cincinnati, O., . . . . .	Marked indistinctly 0.008 per cent. sulphur dioxide; found 0.034 per cent. sulphur dioxide.	
16211	Liberty Maraschino Cherries.	The J. I. Rheinstrom Sons Company, Cincinnati, O., . . . . .	Contained 0.021 per cent. sulphur dioxide.	
136 O	My Wife's Sugar Cane Syrup and Maple Syrup.	Fred Frear, N. Y., . . . . .	Contained 75 per cent. cane sugar syrup; percentage not stated.	
8941 R	Golden Tree Syrup, made from cane sugar and maple sugar.	New England Maple Syrup Company, Boston, Mass., . . . . .	Contained 50 per cent. cane sugar syrup; percentage not stated.	
9117 R			Contained 80 per cent. cane sugar syrup; percentage not stated.	
9119 R			Contained 80 per cent. cane sugar syrup; percentage not stated.	
9121 R			Contained 80 per cent. cane sugar syrup; percentage not stated.	
16190	Standard catsup.	The Grocers Supply Company, Limited, Fall River, Mass., . . . . .	Contained 0.12 per cent. sodium benzoate; percentage not stated.	
16290	Sauterne,	J. De Villeforte & Cie, Bordeaux, . . . . .	Contained 0.13 per cent. sulphur dioxide.	

16197	Pure cider vinegar,	The Grocers Supply Company, Limited, Fall River, Mass.,	Acid, 3.88 per cent.; solids, 1.59 per cent.; low in acid; low in solids.
15978	Pure cider vinegar,	The Grocers Supply Company, Limited, Fall River, Mass.,	Acid, 3.96 per cent.; solids, 1.62 per cent.; low in acid; low in solids.
650 O	Pure cider vinegar,	J. Eames & Sons, Sherborn, Mass.,	Acid, 4.32 per cent.; solids, 1.53 per cent.; low in acid; low in solids.
q 8366	Pure cider vinegar,	John T. Connor Company, Boston, Mass.,	Acid, 4.16 per cent.; solids, 1.60 per cent.; low in acid; low in solids.
q 8325	Pure cider vinegar,	Eagle Specialty Company, Malden, Mass.,	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex-grow: 1; text-align: right;"> <p>Acid, 4.68 per cent.; solids, 1.72 per cent.; low in solids.</p> <p>Acid, 4.60 per cent.; solids, 1.69 per cent.; low in solids.</p> <p>Acid, 4.50 per cent.; solids, 1.63 per cent.; low in solids.</p> </div> <div style="font-size: small;">Acid 3.50 per cent.; low in acid.</div> </div>
q 8379	Pure cider vinegar,	D. Dupuis & Co., New Bedford, Mass.,	68 per cent. U. S. P. strength.
q 8381	Pure syrup vinegar,	Pelham Pharmacy, Boston, Mass.,	46 per cent. U. S. P. strength.
16016	Spirit of peppermint,	Nicholas H. Nevier, Boston, Mass.,	46.3 per cent. U. S. P. strength.
492 O	Spirit of peppermint,	W. F. Hahn, Newton, Mass.,	4 per cent. U. S. P. strength.
494 O	Spirit of peppermint,	Davis & Hatch Spice Company, New Bedford, Mass.,	Contained 12.87 per cent. alcohol by volume.
16317	Spirit of peppermint,	George A. Hill, Springfield, Mass.,	Contained 22.7 per cent. alcohol by volume.
16380	Spirit of peppermint,	Burden & Co., Boston, Mass.,	
9662 N	Hill's Rheumatic Cure,		
	Burden's Cholera Cordial.		
16378	Cream,	Robert Mitchell, 241 Shawmut Avenue, New Bedford, Mass.,	Contained formaldehyde.
16390			

## INSPECTION OF DAIRIES.

During the month of January, 1912, 105 dairies supplying milk for public sale in Massachusetts were examined. All but 55 of the number are situated in New Hampshire and Vermont. The Massachusetts dairies yielded the following data:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Chicopee, . . .	9	6	66.67	3	33.33
Second inspection, . . .	1	—	—	1	100.00
Third inspection, . . .	8	5	62.50	3	37.50
Fourth inspection, . . .	1	1	100.00	—	—
Dighton, . . .	1	1	100.00	—	—
Second inspection, . . .	2	2	100.00	—	—
Lee, . . .	9	7	77.78	2	22.22
Rehoboth, . . .	5	5	100.00	—	—
Second inspection, . . .	1	1	100.00	—	—
Sterling, . . .	—	—	—	—	—
Third inspection, . . .	1	—	—	1	100.00
Tyringham, . . .	16	12	75.00	4	25.00
Waltham, . . .	1	—	—	1	100.00

Total number of Massachusetts dairies examined, . . . . .	55
Number found to be free from objectionable conditions, . . . . .	40
Number concerning which letters were sent, . . . . .	15
Total number of conditions to which attention was called, . . . . .	44
Percentage of dairies which passed inspection, . . . . .	72.73

Included in the total number of Massachusetts dairies were 16 which had started recently in the milk-producing business and were inspected for the first time.

In addition to the above, 3 dairies were visited at which the sale of milk had been discontinued.

The town of Otis was also visited, and it was found that the milk produced there was not marketed as such, but turned into butter and sold in the surrounding towns.

The names of the owners of the dairies in Massachusetts found to be worthy of commendation follow:—

## CHICOPEE.

## Class B.

Baker, C. E.‡	Edwards, M.	Schaner, W. J. §
Bryant, Frank	Fuller, F. H.	Shaw, Edwin L. ‡†
Chapin, Clinton G. ‡	Hahn, G.‡	Smarzyk, J.
Chapin, Ellis W. ‡	Paul, Oscar	Wood, Lewis

## DIGHTON.

## Class B.

Horton, Herbert L.*†	Horton, H. W.	Horton, N. B.*†
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\* Second inspection.

† Third inspection.

‡ Reported favorably on first inspection.

§ Fourth inspection.

## LEE.

## Class B.

Carrington, S.  
Folsom, Miss E.  
Goodrich, John M.

Leahy, Michael  
Palmer, Wellington  
Shaylor, C. H.

Steele, John

Horton, F. H.  
Horton, Henry T.

Horton, O. C.\*  
Horton, William

Pearce, Andrew  
West, Horace

## REHOBOTH.

## Class B.

Caron, Nathan  
Chapin, Robert  
Clarkson, Barnet  
Cloud, Charles E.

Eisenberg, B.  
Gilder, R. W.  
Hale, George  
Heath, Fred C.

Hurwitz & Bailen  
McCarthy, Ward  
Slater, Edward

## Tyringham.

## Class A.

Tytus, R. DeP.

## Class B.

## NEW HAMPSHIRE DAIRIES.

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Deering,	4	2	50.00	2	50.00
Third inspection,	1	1	100.00	-	-
Greenfield,	-	-	-	-	-
Third inspection,	1	1	100.00	-	-
Hancock,	1	1	100.00	-	-
Third inspection,	1	1	100.00	-	-
Henniker,	3	2	66.67	1	33.33
Third inspection,	1	1	100.00	-	-
Hillsborough,	4	2	50.00	2	50.00
Second inspection,	1	1	100.00	-	-
Third inspection,	6	6	100.00	-	-
Peterborough,	2	2	100.00	-	-
Third inspection,	9	8	88.89	1	11.11
Washington,	6	5	83.33	1	16.67

Total number of New Hampshire dairies examined,	.	.	.	.	.	40
Number found to be free from objectionable conditions,	.	.	.	.	.	33
Number concerning which letters were sent,	.	.	.	.	.	7
Total number of conditions to which attention was called,	.	.	.	.	.	24
Percentage of dairies which passed inspection,	.	.	.	.	.	82.50

In addition to the above, 27 dairies were visited at which the sale of milk had been discontinued, or the supply of which was turned into butter and so marketed.

\* Second inspection.

## VERMONT DAIRIES.

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Burke,	-	-	-	-	-
Third inspection,	3	3	100.00	-	-
Lyndonville,	2	1	50.00	1	50.00
St. Johnsbury,	1	-	-	1	100.00
Third inspection,	1	1	100.00	-	-
Sutton,	1	1	100.00	-	-
Third inspection,	2	2	100.00	-	-
Total number of Vermont dairies examined, . . . . .					10
Number found to be free from objectionable conditions, . . . . .					8
Number concerning which letters were sent, . . . . .					2
Total number of conditions to which attention was called, . . . . .					9
Percentage of dairies which passed inspection, . . . . .					80.00

In addition to the above dairies, 32 were visited at which it was found that 24 of these dairies were no longer sending their product to Massachusetts, while the remaining 8 had discontinued the sale of milk.

#### **ANTERIOR POLIOMYELITIS, TRACHOMA AND OPHTHALMIA NEONATORUM.**

Acting under authority of chapter 183 of the Acts of 1907 the State Board of Health, at a meeting held Feb. 1, 1912, voted that anterior poliomyelitis, trachoma and ophthalmia neonatorum be declared "dangerous to the public health" within the meaning of chapter 213 of the Acts of 1902.

#### **BOVINE TUBERCULOSIS AND ITS IMPORTANCE TO THE HEALTH OF THE COMMUNITY.**

In view of the fact that competent observers have estimated the percentage of bovine tuberculosis as 25 per cent. of the cattle owned in this State, the results of the investigations which follow tell a very important story. Park and Krumwiede ("Journal of Medical Research," December, 1911), as the result of a very extended series of observations as to the relation of bovine to human tuberculosis, come to the following conclusions:—

Bovine tuberculosis is practically a negligible factor in adults. It very rarely causes pulmonary tuberculosis or phthisis, which causes the vast majority of deaths from tuberculosis in man, and is the type of disease responsible for the spread of the virus from man to man.

In children, however, the bovine type of tubercle bacillus causes a marked percentage of the cases of cervical adenitis leading to operation, temporary disablement, discomfort and disfigurement. It causes a large percentage of the rarer types of alimentary tuberculosis requiring operative interference, or causing the death of the child directly, or as a contributing cause in other diseases.

In young children it becomes a menace to life and causes from 6½ to 10 per cent. of the total fatalities from this disease.

In this connection the following quotation from an article by Alfred F. Hess, M.D., of New York, entitled "The Importance of a Certified or Pasteurized Butter,"<sup>1</sup> is of interest:—

There is no need of repeating the evidence to the effect that cream contains tubercle bacilli even in larger amounts than the milk from which it is made. When the cream rises, whether it ascends by means of gravity or through the agency of centrifugal force, the fat globules carry with them a large proportion of the bacilli, which are filtered out from the underlying skim milk into the cream and the sediment. The tubercle bacilli of the cream constitute the tubercle bacilli in the butter. It is difficult to state the percentage of contamination of the butter sold in large cities, but we probably shall not go far wide of the mark if we accept Cornet's<sup>2</sup> figure of 12 per cent. as an average. It has been demonstrated by Schroeder that these bacilli can maintain their virulence, in spite of the salt which the butter contains, for a period of three months. These facts naturally led to a consideration of the subject which has been the main field of contention among those actively interested in the investigation of the cause of tuberculosis, namely, the importance of infection in man by the bovine type of tubercle bacillus, and of the alimentary tract as a portal of entry. It is not necessary in this place to discuss this question in detail. However opinions may vary on these questions, I think that almost all are now ready to accept the conclusion that the bovine bacillus constitutes a real menace to the welfare of infants and young children. The investigation in England by the British commission, the more comprehensive one in the United States by Park and Krumwiede, and that of the Imperial Health Bureau of Germany, force this deduction on us; so that it seems certain that in childhood, and especially in the first few years of life, bovine tuberculosis plays an important rôle.

<sup>1</sup> From the Proceedings of the Fifth Annual Conference of American Association of Medical Milk Commissions, May, 1911, p. 41.

<sup>2</sup> Cornet: Die Tuberkulose, Part 1, p. 122.

THE CHARACTER OF MILK IN SMALL COMMUNITIES.<sup>1</sup>

By PROF. H. W. CONN, MIDDLETOWN, CONN.

Most of our knowledge concerning the milk supplied to the public has been obtained from the study of milk in the larger cities. This has been natural and inevitable. Analytical laboratories for chemical and bacteriological work have been located chiefly in the larger cities. More interest has been centered in the milk for the large population of the city than in the milk supply of the limited population of the town, and there has been no difficulty in obtaining money for work in the larger place, but great difficulty in getting it for the smaller community. As a result, while analyses by hundreds of thousands have been made of the so-called "city milk," little is known to-day as to the grade of milk furnished to the small town.

There has been a general impression that the small town is better served in respect to this product than the large city. The source of supply is near at hand; the milk can be delivered fresh, only a very few hours' old; the producer is very likely to be the distributor, and naturally will take a pride in the product that he sells; it is possible to trace individual lots of milk to their source, so that the results of improper methods can be traced directly to those responsible. Then there is a general feeling that a dealer will take more interest in his product when he knows his customers than when his milk goes into a general supply, and its identity is lost. For all these, as well as other reasons, it would seem that the small town should receive fresher and more reliable milk than the city.

On the other hand, it is to be remembered that where epidemics have been traced to milk it is practically always in small, rather than in large, communities. In the small town, too, the milk inspector is commonly unknown. In these places no one especially considers it his duty to interest himself in the purity of the milk. The small community, while protected by law, is actually not protected in fact. In some instances it is known that the small town gets the milk that the large city refuses to accept.

Hence the question arises whether the milk of the small town is better or as good as that furnished in our larger cities. At present, however, little information is in our possession in regard to the matter. During the last two years opportunity has presented itself to study this question.

<sup>1</sup> From the Proceedings of the American Association of Medical Milk Commissions, 1909, p. 71.

The Connecticut State Laboratory is situated in about the center of a small State, with good express connections, so that from a large part of the State milk collected in the morning can be delivered in the laboratory by three in the afternoon. This possibility presented the opportunity of offering the services of the laboratory for milk analysis in such towns as could not of themselves undertake such work. Preliminary tests showed that by placing the milk immediately upon ice it will keep for many hours without any change in bacterial content, so that by shipping immediately in iced cases, the samples of milk from a wide territory can be delivered at the laboratory in practically the same condition that it is collected in the towns from the dealers. Experience has shown that this method is perfectly practical, and that after the collector of the samples has had a little experience he can furnish the laboratory, for analysis, milk in practically the same condition that he collects it.

The samples sent in have been plated for bacteria immediately, the other tests being made as soon as possible. Our methods of analysis have developed nothing new. We use the ordinary methods for determining bacteria, and for fat. To detect watering we have used the refractometer test, which is very simple and accurate. The examinations made have extended over nearly two years, and have been made at all seasons, winter and summer alike. The samples have been sent from communities ranging from the small village, with its 1 or 2 milk dealers, to the small city with its 20 or more dealers, and they thus fairly well represent the milk of the smaller towns of New England.

A general summary of the results of these studies is as follows:—

The use of preservatives is very rare, no instance of it having been found in our samples.

The fat is frequently below the legal standard. Five per cent. of our samples have shown less than the legal quantity. This has, however, manifestly not commonly been due to dishonesty, but to carelessness, as is shown by the fact that about an equal number of samples show more fat than is to be expected in any normal milk. The fat percentage has occasionally been as high as 10, and in one case 12 per cent. This clearly indicates carelessness in the mixing of the milk rather than intentional fraud, but it indicates emphatically the need of some sort of control.

Watering has occasionally been found, but it is uncommon.

The bacterial content, of course, shows wide variations, ranging from as low as about 1,000 to as high as 12,000,000 per cubic centimeter; 23 per cent. of the specimens have shown over 1,000,000 per cubic centimeter; 42 per cent. have contained less than 50,000 per cubic centimeter.

The numbers have been much higher in summer than in winter, few

samples in the winter being over 500,000, and few samples under 500,000 in the summer.

The general average is probably not as high as would be found in a large city, because the nearness to the source makes it possible for the careful dealer to furnish fresher milk with very small numbers of bacteria. These samples bring the average down. The average in summer, however, runs up as high as it is in the city. Considering the fact that these supplies are close to the consumer, so that the milk may be delivered really fresh, the fact that in summer few samples are found under 500,000 bacteria per cubic centimeter, points clearly to a condition in the dairies as faulty as is found in the dairies that supply the larger cities, and they certainly indicate a less efficient cooling of the milk. In short, the quality of the milk furnished our smaller communities is not superior, and probably on the whole is inferior, to that furnished the larger cities.

It has proved to be a difficult matter to get small communities to undertake any kind of milk inspection. To open the purse strings so as to get money to compensate a milk inspector is almost an impossibility in a small town. The only regularly appointed official who has any right to look into the matter is the health officer; and the health officers are usually so poorly paid, and so rarely thanked, that they are not very strongly drawn to placing upon their backs another burden involving more work and more enemies. Quite generally they pay no attention to the subject. What is every one's business is no one's business, and as a final result it appears that, at least in the State in question, the public of small communities is protected against impurities and frauds in regard to the milk supply only in the statute books, and not at all in reality.

Considering the large part of our population that lives in cities of under 20,000 inhabitants, it becomes a manifest duty of those interested in pure milk to use every influence possible to extend to the smaller communities the principles that have become so useful in the larger cities.

#### **THE CARE OF MILK IN THE HOME.<sup>1</sup>**

Milk is a perishable food. The length of time it remains sweet depends largely on the care it receives after delivery to the consumer. Keep it clean, cool and covered and it should remain sweet during the twenty-four hours in which it should be used.

Germs, to grow, require three important things, namely, food, moisture and moderate heat. Milk furnishes food and moisture, and the room air

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<sup>1</sup> Reprinted in part from Educational Series, No. 1, New York Sanitary Milk Dealers Association.

furnishes the necessary warmth. Milk is therefore a very good medium for the growth of germs if not kept cold.

Dust, dirt and flies are the carriers through which germs get into milk. Milk, therefore, should be protected from dust, dirt and flies.

Remember the most important rule about the care of milk is, *keep the milk clean, keep it cold and keep it covered.*

#### ARRIVAL OF THE DAILY SUPPLY.

1. Do not allow milk to stand on the dumb-waiter, stoop, window sill or other place where the driver leaves it. Place it promptly in the ice box.

2. Keep your ice box cold. Keep it well stocked with ice. You cannot obtain good refrigeration without a well-filled ice compartment.

3. Keep your refrigerator clean. Keep it free from disagreeable odors. Milk absorbs unpleasant odors very readily. Strong smelling foods, such as onions, garlic and strong cheeses, should not be kept in the same compartment with milk or butter.

4. Where ice boxes are not available, some makeshift arrangement should be provided. The department of health, New York City, has recommended the following:—

An emergency ice box may be constructed by placing a piece of ice in a covered tin pail or bucket having a hole in the bottom. An old leaky pail will answer.

Place the bottles of milk in direct contact with the ice, and cover the whole with a heavy cloth or blanket. The pail may be kept in the sink.

5. The sanitary code, New York City, provides that milk should be kept at 50° F. or lower. Milk purchased from stores should be delivered in a clean condition and at or below the required temperature.

6. Keep the milk prepared for infant feeding in nursery bottles in the ice box until just before using. The practice of heating the baby's milk at evening and keeping it warm until the night or early morning feeding is very bad. The heat thus maintained is most favorable to the growth of germs.

#### USE AND PROTECTION.

1. Return promptly to the ice box unused portion of milk. Standing in the warm room will greatly hasten the growth of germs. Keep the milk tightly covered, so that dust, dirt and flies may not enter.

2. Wipe the mouth of the bottle carefully with a *clean* towel before removing the cap. Use a sharp-pronged instrument, inserted diagonally into the center of the cap, to remove it. Keep this instrument clean.

Lift the cap with care and rinse it in clean running water before replacing it.

Do not use large steel knives, shears or other heavy implements to remove the cap. Such instruments splinter the glass, particles of which may enter the milk.

Many dealers, on request, will supply convenient implements for this purpose.

3. Pour the milk into clean receptacles. Dirty vessels will as readily contaminate the milk as will dust, dirt and flies.

Place milk dipped from cans or tanks only in clean covered pails or other covered receptacles.

4. Mix the milk well before using. Inverting the bottle rapidly two or three times will accomplish this. Cream separates and rises to the top, making this necessary.

5. Pour only enough milk from the bottle for the specific use. Do *not* put any unused portion back with the milk from which it was taken, but place it in the ice box in another covered vessel.

6. Do not keep more than one day's supply of milk at a time. *Order a fresh supply daily.*

#### TREATMENT OF EMPTY CONTAINERS.

1. Wash the milk bottles before returning them to your dealer. This is required by law [New York]. The proper way to wash a milk bottle is to first rinse it thoroughly with cold water. When all the milky film has been removed from the inside, then wash carefully with very hot water. All vessels used for holding milk or cream should be cleansed in the same manner.

2. Do not use milk bottles for any other purpose than the holding of milk or cream. Such other use is prohibited by law.

3. Rinse nursery bottles and nipples in cold water and wash in boiling water immediately after each feeding. Turn the nipples inside out and thoroughly cleanse. Rinse the bottles and nipples again in boiling water before using.

4. Return empty bottles to the dealer daily after cleaning.

#### FINALLY.

*Keep the milk clean, keep it cold and keep it covered.*

The Massachusetts law concerning milk containers is as follows:—

#### ACTS OF 1906, CHAPTER 116.

SECTION 1. Whoever by himself or by his servant or agent or as the servant or agent of any other person, firm or corporation, having custody of a milk can, measure or other vessel used as a container for milk destined

for sale, places or causes or permits to be placed therein any offal, swill, kerosene, vegetable matter or any article other than milk, skimmed milk, buttermilk, cream, or water or other agent used for cleansing said can, measure or other vessel, shall be punished by a fine of not more than ten dollars for each vessel so misused.

SECTION 2. Whoever by himself or by his servant or agent or as the servant or agent of any other person, firm or corporation, sends, ships, returns or delivers, or causes or permits to be sent, shipped, returned or delivered to any producer of milk any milk can, measure or other vessel used as a container for milk, containing any offal, swill, kerosene, vegetable matter, or any other offensive material, shall be punished by a fine of not more than ten dollars for every such vessel.

#### **A MILK-BORNE EPIDEMIC OF TYPHOID FEVER AND THE DEMONSTRATED VALUE OF THE WIDAL REACTION IN DETECTING A TYPHOID CARRIER.<sup>1</sup>**

EDWARD B. BIGELOW, M.D., ASSISTANT BACTERIOLOGIST, BOARD OF HEALTH, WORCESTER, MASS.

This epidemic of typhoid fever, which occurred among the customers of one milk distributor, is reported, that once more the probable danger to the community of a carrier of infection, engaged in the production of a food, may be emphasized, and the value of the agglutination reaction of Widal, as a means for locating such a carrier, be more fully appreciated. By reports of such epidemics the public will be aroused to the dangerous possibilities of these carriers. With this realization, the co-operation of whole communities, which is lacking at present, will be enlisted, the selfish personal motives and prejudices of ignorance, which attempt to block the efforts of the health service, will be overcome, and the culmination will be a general demand that methods be devised and means be generously provided that such carriers may be sought out in advance, and such epidemics thus anticipated.

In the last twenty-five years, an average of 106 cases of typhoid fever has been reported yearly to the board of health of Worcester, a city with a population of 145,000 at present. This is, roughly, an average of one case a thousand of population a year for this period. In fact, however, the city has more than doubled in population in these twenty-five years, while the aggregate number of cases of typhoid fever is actually less in the second half of this period than in the first, increasing this ratio markedly. In the year 1910 the records of the health board show 295 reported cases, more than one case to each five hundred of population.

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<sup>1</sup> Reprinted from the Journal of the American Medical Association, Oct. 28, 1911, Vol. LVII, pp. 1418-1420.

The source of infection in 204 of these cases can be traced to one milk distributor's route. Through misunderstandings between responsible parties because of a change in physicians or transfer to the hospitals, 9 additional cases were discovered after the epidemic was over, no report of which had been made to the board of health, and this number rightfully should be added to these 204 cases. Thus in this epidemic at least 213 cases with 10 deaths may be certainly attributed to one milk route. If the source of infection in several other cases could be surely traced, it is probable that several more of the 295 reported cases would be enumerated in this epidemic. Of these 213 cases, more than 180, after careful study, may be classed as primary, and it may be said that their infection was incurred at practically the same time. The remainder for the larger part were cases developing in families secondarily to one of the primary cases. Two were nurses employed in the hospitals in the care of primary cases, and a few are to be attributed probably to two cases among the employees of the distributor, who will be mentioned later.

From Jan. 1 to Aug. 11, 1910, only 18 cases of typhoid fever had been reported to the board of health. During that day (August 11) 7 more cases were reported. Six of these were on one milk distributor's route. An investigation of the premises of this distributor was made the following morning. Two of his employees complained that for the past two or three days they had had head and back aches, loss of appetite, felt weak and tired, but had continued about their work of distributing milk, washing bottles and other utensils used in the distribution of the milk. On physical examination, both had rose spots and temperatures, the higher only 100.5°. Blood examination showed positive Widal agglutination reactions in both. They were at once removed to the hospital. Specimens of blood and examination of all other persons on the premises were negative in results. These two cases of typhoid fever were not the source of the infection of the 6 cases reported on the day previously, as their symptoms were synchronous or even later in onset. It was concluded, however, that their infection was incurred from the same source. Therefore, evidently a prior source for the common origin of the infection had of necessity to be sought.

This distributing milkman secured his supply from a milk car and four dairies within a few miles of the city. From the milk car several other distributors also obtained their supply. No cases had developed on their routes. This fact seemed temporarily to rule out the car and its supply as the source of infection. That afternoon the four dairies were investigated. On ordinary inspection there was nothing suspicious about them. No person living on any of these farms, so far as could be learned, was or had been recently sick, with the exception of one woman, who, it

was definitely proved before the day was over, did not have typhoid fever. That evening the specimens of blood obtained from every person connected with these dairies — men, women and children — were examined by the agglutination test for typhoid. Of these 25 or more specimens one gave a positive Widal test.

This man of the positive Widal was visited again the next day, and his previous history more carefully taken. He had been producing milk for thirty years. He said that he had had typhoid fever twenty-six years ago. For years he had not been sick enough to be confined to the bed. Two weeks before, however, he recalled that for a few days he had had a slight attack of diarrhoea with some headache, accompanied by a small amount of bright blood in the bowel movements. He had not given this any especial attention, because he had been subject for years to such attacks, together with bleeding from hemorrhoids. He daily assisted his hired man with the milking and handled the utensils. He boarded in a family of nine, none of whom had had typhoid recently. Their Widals were all negative.

Subsequently (August 19–26), specimens of urine and feces were obtained from this man on four different occasions over a period of eight days. These were examined after the method described by the Overlanders, Graham and Dailey,<sup>1</sup> oxbile, malachite green and Endo's fuchsin agar media being used. The stools were negative as to typhoid. From each of the four specimens of urine, one or more actively motile bacilli was isolated. These bacilli did not stain by Gram's method, did not produce gas in dextrose agar, nor curdle milk, but did produce, however, a slight initial acidity in litmus milk followed by a return to the original reaction the same as did the control. There was no production of indol in peptone solution and no liquefaction of gelatin in seven days. These organisms were agglutinated in a few minutes by a dilution of 1 to 200 of blood serum obtained from three different known typhoid patients. At this time I was undergoing a course of inoculations with typhoid vaccines; my blood serum also completely agglutinated them in the same dilution in fifteen minutes.

More than two months later (October 31–November 4) this man's blood and urine were again examined. The blood in a dilution of 1 to 200 gave a positive agglutination reaction with typhoid organisms in less than one-half hour. The three specimens of urine collected on alternate days and plated on Endo gave an abundant growth of only one type of colony. More than 70 of these colonies having been picked off, it was found that each one reacted similarly to the tests previously enumerated.

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<sup>1</sup> Overlander, C. L. and J. E., Graham and Dailey: Boston Medical and Surgical Journal, Jan. 14, 1909. Vol. CLX, No. 2, p. 38.

In addition, at Prof. M. J. Rosenau's suggestion, a rabbit was repeatedly inoculated during a three-week period with a vaccine made from one of these organisms. The serum of this rabbit at the end of that time gave a macroscopic agglutination reaction when tried out in series against cultures of the laboratory typhoid organism in a dilution as high as 1 to 1,100. The serum of a second rabbit, employed as control and similarly treated with vaccine from the stock laboratory typhoid organism, agglutinated one of these organisms isolated from the urine in a dilution of 1 to 1,350. This was as high a dilution as that in which the stock laboratory typhoid organism itself in the control series was agglutinated by the serum of this second rabbit.

The plates of this last examination were in marked contrast, presenting an entirely different condition of affairs from that which was found when, this same technic having been employed the preceding year, an examination was made of the urine and feces of 12 convalescent typhoid fever patients from the wards of the Worcester City Hospital, the bacteriologic work of both years having been performed in the laboratory of that institution. These 12 patients had been free from fever for from ten days to two weeks or more when examined. A typhoid organism was recovered from 3, a positive result of 25 per cent. for the 12 cases. However, out of more than 500 organisms isolated from these 12 cases, only 3 proved to be typhoid organisms — that is, only 1 typhoid organism was isolated in each of the 3 cases which were positive, while in this carrier case every one of the numerous colonies on the plates apparently was a typhoid colony.

The agglutination reaction seems of much value in tracing the source of milk-borne epidemics of typhoid fever, to judge not only from the experience just cited, where it was most instrumental in bringing this case of a carrier to light, but also from that of the preceding summer in two epidemics of fortunately a markedly smaller number of cases. The probable proof of the source of these two epidemics was not as certainly established by actual attempted isolation of the organism as in this epidemic just reported. The co-operation of the suspected individuals was lacking in submitting to further tests than a Widal, for their hostility was aroused because of the fear that their private interests would be jeopardized.

In the first of these epidemics 8 cases occurred on one milk route. On the dairy farm suspected as the source was a case later diagnosed as typhoid fever, synchronous in symptoms with these 8 cases, and therefore not the source of their infection. The people living on the farm were questioned, and it was discovered that one young man who had never had

any severe illness in his life, had had, some two or three weeks previously, an attack of so-called "grippe" of about two weeks' duration, during which time he had felt unable to attend to his business. For two of those days he had had an attack which he called "cholera morbus." His blood gave a positive Widal reaction.

To the second of these epidemics at least 14 cases of typhoid fever on one milk distributor's route can be attributed. In the search for a source of infection more than 50 Widals were performed on specimens of blood obtained from all the persons living on the different dairy farms supplying this distributor. Only one of these Widals was positive. The man from whom this specimen was obtained gave no history of any recent illness. The evidence that he might be the probable source was strengthened by this fact; the milk from this one of the several dairies was the milk bottled for the more particular customers, and on further analysis of the cases it was found that it was among those consuming this bottled milk that the 14 cases occurred.

It has been remarked that the light cases of typhoid fever, unrecognized as such, and the carriers of the specific organism constitute the most formidable source of infection in a community possessing a pure water supply. Each epidemic leaves its residue of chronic carriers, that are a threat of future epidemics. These carriers should be sought out and prohibited from engaging in such occupations as cooking, baking, dairy work, etc., which may from the articles handled and consumed without further cooking endanger the lives of others. Milk, from its nature, is an especially fine culture medium; if contaminated with typhoid bacilli, particularly in the warm summer months, it is a most "effective" intermediary agent from the carrier to the consumer.

The recommendation of the committee of the American Public Health Association on typhoid fever that physicians should be impressed with the necessity of reporting this disease promptly is an excellent one. For, "until the physician, who is really the scout of the public health service, reports the location of the enemy, all our paraphernalia with all its elaborate organization is at a standstill."<sup>1</sup> The truth of this statement is shown by the epidemic reported in this paper, since the board of health had no inkling that such an epidemic was about to burst on the community until physicians reported actual cases, when the two employees as secondary sources of further infection were promptly recognized and removed. But these light cases, for which physicians are not called in, and carriers, because they are unrecognized as such, are the real danger of initiating other epidemics.

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<sup>1</sup> American Journal Public Hygiene, February, 1910, Vol. XX, No. 1, (New Series Vol. VI, No. 1) p. 50.

Typhoid fever has been called a preventable disease, and to consider it as such is certainly the goal which the public health service must strive to attain. That man constantly harbors the specific organism of typhoid fever is generally recognized at present. Precautions are taken to protect the public from typical cases. If the chronic carriers of this disease could be known, and the food and water supplies, as intermediate bearers, be protected from their contamination, typhoid fever could soon be stamped out. The disease is preventable only by working along this line. Therefore, the new and serious problem that confronts the health service at present is, How is this knowledge of a carrier, which is of such recent recognition, to be gained, before it is bought at the extravagant price of an epidemic? A method of defense for this new problem, that is in the least satisfactory, has not as yet been devised.

The various methods advocated for the discovery of carriers, as general examination of excreta, or even only the examination of the excreta of those persons with a history of a previous typhoid infection, are propositions too large to be practicable. The second suggestion makes no allowance for the fact that in many cases of typhoid carriers there is a lack of a previous history of typhoid fever, and again that many carriers excrete the bacilli only intermittently.

From the experience of the last two years as set forth in this paper, the suggestion is made that specimens of blood for Widals be taken generally from persons living on dairy farms or handling foods that are consumed without further cooking, and then that the excreta of those only that give a positive agglutination reaction be examined. The Widal reaction in most cases of typhoid fever rapidly disappears after defervescence. The presence of post-typhoid suppuration somewhat increases its persistence.<sup>1</sup> Most carriers possess it. Therefore, if a Widal reaction persists, that person if employed as mentioned above should be looked on with suspicion until proved free from typhoid organisms by repeated examinations of excreta.

This procedure also is an immense proposition, when, as is the case in the city of Worcester with a population of 145,000 for an example, milk is supplied from more than 600 dairies and 900 stores and distributors. These statistics take no account of bakers, cooks and other persons who come in intimate contact with other kinds of food. This simple procedure of a Widal reaction, however, should certainly be carried out on the blood of all persons handling, or living on farms producing, milk which is put on the market as certified.

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<sup>1</sup> Louisson and French: Guy's Hospital Reports, 1907, Vol. LXI, p. 227.

## ACTS OF 1912, CHAPTER 59.

## AN ACT TO RESTRICT THE USE OF COMMON TOWELS.

SECTION 1. In order to prevent the spread of communicable diseases, the state board of health is hereby authorized to prohibit in hotels and in such public places, vehicles or buildings as it may designate the providing of a common towel, and the board may establish rules and regulations for this purpose.

SECTION 2. Whoever violates the provisions of this act, or any rule or regulation of the state board of health made under authority hereof, shall be deemed guilty of a misdemeanor and be liable to a fine not exceeding twenty-five dollars for each offence.

SECTION 3. This act shall take effect on the first day of June, nineteen hundred and twelve. [Approved February 9, 1912.]



New Series.

FEBRUARY, 1912.

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# MONTHLY BULLETIN



OF THE  
STATE BOARD OF HEALTH  
OF  
MASSACHUSETTS.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING FEB. 3, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				PrincipaL In- fectious Dis- eases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.
Boston, .	686,092	274	62	80	37	21	8	2	-	1	3
Worcester, .	145,986	47	11	16	11	4	1	-	-	-	-
Fall River, .	119,295	40	16	18	12	2	1	-	-	-	-
Lowell, .	106,294	29	8	10	8	2	-	-	-	-	-
Cambridge, .	104,839	33	5	12	4	3	-	4	-	-	-
New Bedford, .	96,652	28	13	8	6	1	1	1	1	-	-
Lynn, .	89,336	23	7	9	5	2	-	-	-	-	-
Springfield, .	88,926	32	7	11	6	1	1	1	1	1	-
Lawrence, .	85,892	40	8	13	7	3	-	1	1	-	-
Somerville, .	77,236	22	-	7	4	2	1	-	-	-	-
Holyoke, .	57,730	16	6	7	3	4	-	-	-	-	-
Brockton, .	56,878	19	7	6	5	-	1	-	-	-	-
Malden, .	44,404	8	1	1	1	-	-	-	-	-	-
Haverhill, .	44,115	14	7	8	4	1	1	1	-	-	-
Salem, .	43,697	8	4	1	1	-	-	-	-	-	-
Newton, .	39,806	15	4	3	-	2	-	-	-	-	-
Fitchburg, .	37,826	10	5	7	6	1	-	-	-	-	-
Taunton, .	34,259	18	6	2	1	1	-	-	-	-	-
Everett, .	33,484	10	4	2	2	1	-	-	-	-	-
Quincy, .	32,642	5	2	2	2	2	-	-	-	-	-
Chelsea, .	32,452	15	3	2	2	2	-	1	-	-	-
Pittsfield, .	32,121	9	2	2	2	2	-	-	-	-	-
Waltham, .	27,834	10	4	3	3	3	-	-	-	-	-
Brookline, .	27,792	15	1	1	1	1	-	-	-	-	-
Chicopee, .	25,401	6	3	2	2	1	-	-	-	-	-
Gloucester, .	24,398	6	2	2	2	2	-	-	-	-	-
Medford, .	23,150	9	1	3	3	3	-	-	-	-	-
North Adams, .	22,019	9	3	1	1	1	-	-	-	-	-
Northampton, .	19,431	5	0	-	-	-	-	-	-	-	-
Beverly, .	18,650	3	1	1	1	1	-	-	-	-	-
Revere, .	18,219	2	1	-	-	-	-	-	-	-	-
Leominster, .	17,580	2	-	1	1	1	-	-	-	-	-
Attleborough, .	16,215	7	3	1	1	1	-	-	-	-	-
Westfield, .	16,044	6	-	1	1	1	-	-	-	-	-
Peabody, .	15,721	5	-	-	2	1	1	-	-	-	-
Melrose, .	15,715	5	-	-	2	1	1	-	-	-	-
Woburn, .	15,308	2	0	-	-	-	-	-	-	-	-
Newburyport, .	14,949	3	-	1	1	1	-	-	-	-	-
Gardner, .	14,699	9	3	1	1	1	-	-	-	-	-
Marlborough, .	14,579	4	0	1	1	1	-	-	-	-	-
Clinton, .	13,075	3	1	-	-	-	-	-	-	-	-
Milford, .	13,055	6	1	1	1	1	-	-	-	-	-
Adams, .	13,026	2	1	-	-	-	-	-	-	-	-
Framingham, .	12,948	6	0	-	-	-	-	-	-	-	-
Weymouth, .	12,895	1	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	5	0	2	1	1	-	-	-	-	-
Southbridge, .	12,592	3	1	-	-	-	-	-	-	-	-
Plymouth, .	12,141	1	-	1	1	1	-	-	-	-	-
Webster, .	11,509	1	0	-	-	-	-	-	-	-	-
Methuen, .	11,448	3	1	-	-	-	-	-	-	-	-
Wakefield, .	11,404	2	-	-	-	-	-	-	-	-	-
Arlington, .	11,187	2	-	1	1	1	-	-	-	-	-
Greenfield, .	10,427	6	1	-	1	1	-	-	-	-	-
Winthrop, .	10,132	2	-	1	1	-	-	-	-	-	-

*Recapitulation.*

Total of report- ing towns, .	2,593,485	865	216	254	146	56	15	12	2	1	4	-
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WEEK ENDING FEB. 10, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or not classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	233	62	79	35	13	—	—	5	—	2
Worcester, .	145,986	57	10	18	11	5	—	—	—	1	—
Fall River, .	119,295	38	15	22	10	4	—	—	2	—	—
Lowell, .	106,294	35	15	13	5	1	—	—	1	—	—
Cambridge, .	104,839	31	7	15	6	6	—	—	—	—	—
New Bedford, .	96,652	42	17	17	12	3	—	—	1	—	—
Lynn, .	89,336	23	3	6	2	4	—	—	—	—	—
Springfield, .	88,926	22	4	7	4	1	—	—	—	—	—
Lawrence, .	85,892	25	10	9	6	1	—	—	—	—	—
Somerville, .	77,236	30	4	11	8	3	—	—	—	—	—
Holyoke, .	57,730	19	6	5	3	1	—	—	—	—	—
Brockton, .	56,878	19	5	5	5	2	—	—	—	—	—
Malden, .	44,404	11	1	2	—	—	—	—	—	—	—
Haverhill, .	44,115	13	3	3	2	—	—	—	—	—	—
Salem, .	43,697	25	8	6	5	1	—	—	—	—	—
Newton, .	39,806	13	0	2	2	—	—	—	—	—	—
Fitchburg, .	37,826	9	4	1	—	1	—	—	—	—	—
Taunton, .	34,259	13	4	5	5	—	—	—	—	—	—
Everett, .	33,484	11	1	3	—	1	—	—	—	—	—
Quincy, .	32,642	13	2	2	1	1	—	—	—	—	—
Chelsea, .	32,452	9	1	3	3	—	—	—	—	—	—
Pittsfield, .	32,121	13	4	1	—	—	—	—	—	—	—
Waltham, .	27,834	7	0	3	3	—	—	—	—	—	—
Brookline, .	27,792	6	2	2	2	—	—	—	—	—	—
Chicopee, .	25,401	5	2	2	1	—	—	—	—	—	—
Gloucester, .	24,398	6	2	1	—	—	—	—	—	—	—
Medford, .	23,150	7	2	1	1	—	—	—	—	—	—
North Adams, .	22,019	8	3	5	3	—	—	—	—	—	—
Northampton, .	19,431	7	0	2	2	—	—	—	—	—	—
Beverly, .	18,650	2	1	—	—	—	—	—	—	—	—
Revere, .	18,219	6	3	3	1	—	—	—	—	—	—
Leominster, .	17,580	5	3	—	—	—	—	—	—	—	—
Attleborough, .	16,215	2	0	1	—	—	—	—	—	—	—
Westfield, .	16,044	7	3	3	—	—	—	—	—	—	—
Peabody, .	15,721	2	1	1	1	—	—	—	—	—	—
Melrose, .	15,715	2	1	1	1	—	—	—	—	—	—
Woburn, .	15,308	7	2	1	1	—	—	—	—	—	—
Newburyport, .	14,949	8	—	3	2	—	—	—	—	—	—
Gardner, .	14,699	6	2	2	1	—	—	—	—	—	—
Marlborough, .	14,579	5	1	2	2	—	—	—	—	—	—
Clinton, .	13,075	7	3	—	—	—	—	—	—	—	—
Milford, .	13,055	3	0	1	—	—	—	—	—	—	—
Adams, .	13,026	3	3	1	1	—	—	—	—	—	—
Framingham, .	12,948	10	0	6	4	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	2	1	—	—	—	—	—	—	—	—
Southbridge, .	12,592	4	2	1	1	—	—	—	—	—	—
Plymouth, .	12,141	8	1	—	—	—	—	—	—	—	—
Webster, .	11,509	2	0	—	—	—	—	—	—	—	—
Methuen, .	11,448	2	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	0	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	4	1	1	1	—	—	—	—	—	—
Greenfield, .	10,427	2	1	—	—	—	—	—	—	—	—
Winthrop, .	10,132	2	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	851	223	280	153	61	9	11	1	2	7	6
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WEEK ENDING FEB. 17, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or not classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mumps.
Boston, .	686,092	258	73	90	43	20	—	4	1	—	9
Worcester, .	145,986	49	12	18	11	5	1	—	—	—	1
Fall River, .	119,295	44	20	18	13	2	—	—	—	—	—
Lowell, .	106,294	42	11	17	7	5	—	—	—	—	—
Cambridge, .	104,839	32	6	21	10	8	—	1	—	—	—
New Bedford, .	96,652	44	16	18	15	2	—	—	—	—	—
Lynn, .	89,336	18	7	5	4	—	—	—	—	—	—
Springfield, .	88,926	35	4	8	5	1	—	1	—	—	—
Lawrence, .	85,892	23	8	12	5	5	—	—	—	—	—
Somerville, .	77,236	25	3	6	3	3	—	—	—	—	—
Holyoke, .	57,730	15	2	6	5	—	—	1	—	—	—
Brockton, .	56,878	18	5	4	3	—	—	—	—	—	—
Malden, .	44,404	13	4	2	2	—	—	—	—	—	—
Haverhill, .	44,115	12	3	4	2	1	—	—	—	—	—
Salem, .	43,697	19	4	6	4	2	—	—	—	—	—
Newton, .	39,806	11	1	3	1	—	—	1	—	—	—
Fitchburg, .	37,826	10	4	—	—	—	—	—	—	—	—
Taunton, .	34,259	15	2	6	4	1	—	—	—	—	—
Everett, .	33,484	14	6	3	1	2	—	—	—	—	—
Quincy, .	32,642	16	4	4	1	2	—	—	—	—	—
Chelsea, .	32,452	15	5	6	3	2	—	—	—	—	—
Pittsfield, .	32,121	14	5	4	2	—	—	1	1	—	—
Waltham, .	27,834	10	1	4	1	2	—	—	1	—	—
Brookline, .	27,792	6	—	1	—	1	—	—	—	—	—
Chicopee, .	25,401	7	2	1	—	—	—	1	—	—	—
Gloucester, .	24,398	8	2	4	3	—	—	—	—	—	—
Medford, .	23,150	10	3	3	2	1	—	—	—	—	—
North Adams, .	22,019	7	1	3	2	—	—	—	—	—	—
Northampton, .	19,431	9	1	4	2	1	—	—	—	—	—
Beverly, .	18,650	4	—	1	1	—	—	—	—	—	—
Revere, .	18,219	2	1	—	—	—	—	—	—	—	—
Leominster, .	17,580	6	3	2	1	—	—	—	—	—	—
Attleborough, .	16,215	5	1	4	1	2	—	—	—	—	—
Westfield, .	16,044	5	1	2	1	1	—	—	—	—	—
Peabody, .	15,721	10	—	1	—	—	—	1	—	—	—
Melrose, .	15,715	4	1	1	1	—	—	—	—	—	—
Woburn, .	15,308	6	1	—	—	—	—	—	—	—	—
Newburyport, .	14,949	8	1	—	—	—	—	—	—	—	—
Gardner, .	14,699	4	2	2	1	—	—	—	—	—	—
Marlborough, .	14,579	5	1	—	—	—	—	—	—	—	—
Clinton, .	13,075	2	—	1	1	—	—	—	—	—	—
Milford, .	13,055	3	0	1	—	—	—	—	—	—	—
Adams, .	13,026	2	0	2	—	—	—	—	—	—	—
Framingham, .	12,948	2	1	1	1	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	0	—	—	—	—	—	—	—	—
Southbridge, .	12,592	3	2	1	1	—	—	—	—	—	—
Plymouth, .	12,141	9	2	3	—	—	—	—	—	—	—
Webster, .	11,509	2	1	1	1	—	—	—	—	—	—
Methuen, .	11,448	4	—	1	1	—	—	—	—	—	—
Wakefield, .	11,404	3	—	2	—	—	1	1	—	—	—
Arlington, .	11,187	1	—	1	1	—	—	—	—	—	—
Greenfield, .	10,427	1	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	3	1	2	2	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	894	234	310	166	73	13	8	4	8	12	5
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WEEK ENDING FEB. 24, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or non-classified.)	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	255	53	92	43	25	6	1	1	4	1	1
Worcester, .	145,986	46	18	16	13	1	—	—	1	—	—	1
Fall, River, .	119,295	44	18	31	20	7	—	—	—	—	—	1
Lowell, .	106,294	41	21	16	13	1	—	—	—	—	—	—
Cambridge, .	104,839	30	4	9	2	2	—	—	—	—	—	—
New Bedford, .	96,652	32	13	18	12	3	—	—	—	—	—	—
Lynn, .	89,336	31	13	9	6	2	—	—	—	—	—	—
Springfield, .	88,926	29	7	6	4	—	—	—	—	—	—	—
Lawrence, .	85,892	19	10	15	10	1	—	—	1	—	—	—
Somerville, .	77,236	26	—	6	5	1	—	—	—	—	—	—
Holyoke, .	57,730	16	4	3	3	—	—	—	—	—	—	—
Brockton, .	56,878	18	7	9	6	1	—	—	—	—	—	1
Malden, .	44,404	22	4	6	3	1	—	—	1	—	—	—
Haverhill, .	44,115	17	5	7	3	—	—	—	—	—	—	2
Salem, .	43,697	13	6	3	2	—	—	—	—	—	—	—
Newton, .	39,806	11	1	2	2	—	—	—	—	—	—	—
Fitchburg, .	37,826	11	3	3	3	2	—	—	—	—	—	—
Taunton, .	34,259	15	7	3	3	—	—	—	—	—	—	—
Everett, .	33,484	15	6	2	1	1	—	—	—	—	—	—
Quincy, .	32,642	23	5	5	4	—	—	—	—	—	—	—
Chelsea, .	32,452	12	4	5	5	—	—	—	—	—	—	—
Pittsfield, .	32,121	9	—	1	—	—	—	—	—	—	—	—
Waltham, .	27,834	11	2	3	3	—	—	—	—	—	—	—
Brookline, .	27,792	6	—	1	1	—	—	—	—	—	—	—
Chicopee, .	25,401	5	3	2	2	—	—	—	—	—	—	—
Gloucester, .	24,398	12	3	5	3	—	—	—	—	—	—	—
Medford, .	23,150	14	4	8	8	—	—	—	—	—	—	—
North Adams, .	22,019	1	—	—	—	—	—	—	—	—	—	—
Northampton, .	19,431	12	1	3	1	—	—	—	—	—	—	—
Beverly, .	18,650	3	1	1	1	—	—	—	—	—	—	—
Revere, .	18,219	3	1	2	1	—	—	—	—	—	—	—
Leominster, .	17,580	6	—	3	1	—	—	—	—	—	—	—
Attleborough, .	16,215	3	0	1	1	—	—	—	—	—	—	—
Westfield, .	16,044	8	—	3	—	—	—	—	—	—	—	—
Peabody, .	15,721	6	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	4	1	1	—	—	—	—	—	—	—	1
Woburn, .	15,308	7	3	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	6	1	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	1	—	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	7	2	2	1	—	—	—	—	—	—	—
Clinton, .	13,075	5	1	2	2	—	—	—	—	—	—	—
Milford, .	13,055	3	0	—	—	—	—	—	—	—	—	—
Adams, .	13,026	4	2	1	—	—	—	—	—	—	—	—
Framingham, .	12,948	5	0	4	4	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	4	1	1	1	—	—	—	—	—	—	—
Southbridge, .	12,592	1	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—	—
Webster, .	11,509	3	1	2	1	—	—	—	—	—	—	—
Methuen, .	11,448	3	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	5	1	1	1	—	—	—	—	—	—	—
Greenfield, .	10,427	6	2	1	1	—	—	—	—	—	—	—
Winthrop, .	10,132	1	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	895	242	312	188	59	11	7	2	5	3	7
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF FEB. 3, 10, 17 AND 24, 1912.**

DISEASE.	Place.	WEEK ENDING—			
		Feb. 3.	Feb. 10.	Feb. 17.	Feb. 24.
Cerebro-spinal meningitis,	Boston, . . . .	—	—	1	2
	Fall River, . . . .	—	1	—	—
	Worcester, . . . .	—	2	—	1
Erysipelas, . . . .	Boston, . . . .	2	1	2	2
	Cambridge, . . . .	—	1	—	—
	Leominster, . . . .	—	—	—	1
	Lowell, . . . .	—	—	—	1
	New Bedford, . . . .	—	—	—	1
	Newton, . . . .	1	—	—	—
	Springfield, . . . .	—	1	—	—
	Worcester, . . . .	—	—	1	—
Influenza, . . . .	Attleborough, . . . .	—	—	1	—
	Boston, . . . .	3	1	—	1
	Cambridge, . . . .	1	—	2	1
	Gardner, . . . .	1	—	—	—
	Haverhill, . . . .	1	—	—	1
	Lawrence, . . . .	—	1	—	—
	Lowell, . . . .	—	1	—	—
	Marlborough, . . . .	—	—	—	1
	North Adams, . . . .	—	1	—	—
	Northampton, . . . .	—	—	1	—
Diarrhoeal diseases, . . .	Boston, . . . .	3	9	2	5
	Cambridge, . . . .	—	1	—	2
	Chicopee, . . . .	—	—	—	1
	Fall River, . . . .	3	3	2	1
	Lawrence, . . . .	—	1	—	3
	Lowell, . . . .	—	—	1	—
	Lynn, . . . .	—	—	1	—
	Malden, . . . .	—	—	—	1
	New Bedford, . . . .	—	1	—	2
	North Adams, . . . .	—	—	1	—
	Northampton, . . . .	—	—	—	1
	Quincy, . . . .	—	—	1	1
	Taunton, . . . .	—	—	1	—
Puerperal fever, . . .	Worcester, . . . .	—	—	—	1
	Boston, . . . .	—	2	3	—
	Fall River, . . . .	—	1	—	1
	Lawrence, . . . .	1	—	—	—
Anterior poliomyelitis,	Springfield, . . . .	1	—	—	—
	New Bedford, . . . .	1	—	—	—
Meningitis other than cerebro-spinal,	Adams, . . . .	—	—	1	—
	Everett, . . . .	—	1	—	—

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
FEBRUARY 3, 10, 17 AND 24, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —				
	Feb. 3.	Feb. 10.	Feb. 17.	Feb. 24.	Total.
Diphtheria, . . . . .	144	131	116	128	519
Measles, . . . . .	624	574	491	559	2,248
Scarlet fever, . . . . .	154	149	140	123	566
Typhoid fever, . . . . .	18	24	16	20	78
Tuberculosis, pulmonary, (or not classified), . . . . .	146	142	169	136	593
Tuberculosis other than pulmonary, . . . . .	17	19	14	15	65
Cerebro-spinal meningitis, . . . . .	2	5	4	—	11
Meningitis other than cerebro-spinal, . . . . .	—	—	—	—	—
Whooping cough, . . . . .	131	96	88	133	448
Varicella, . . . . .	129	133	140	99	501
Ophthalmia neonatorum, . . . . .	27	29	37	41	134
Anterior poliomyelitis, . . . . .	2	2	—	1	5
Mumps, <sup>1</sup> . . . . .	12	5	14	16	47
Smallpox, . . . . .	9	3	2	—	14
Trachoma, . . . . .	2	1	—	—	3
Erysipelas, <sup>1</sup> . . . . .	—	—	1	1	2
Actinomycosis, . . . . .	—	1	—	—	1

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of February, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	2	—	2	Maple syrup, . . .	1	—	1
Canned beans, . . .	1	—	1	Meat products:—			
Cider, . . .	—	1	1	Hamburg steak, . . .	1	1	2
Cocoa, . . .	2	1	3	Sausages, . . .	4	7	11
Coffee, . . .	1	5	6	Milk, . . .	227	45	272
Confectionery, . . .	5	4	9	Molasses, . . .	1	—	1
Cream, . . .	12	1	13	Nonalcoholic			
Drugs, . . .	145	30	175	drinks, . . .	1	—	1
Eggs, . . .	11	5	16	Olive oil, . . .	7	—	7
Flavoring extracts:—				Pickles, . . .	3	—	3
Lemon, . . .	1	—	1	Salad dressing, . . .	2	—	2
Peppermint, . . .	1	—	1	Spices, . . .	8	—	8
Vanilla, . . .	14	3	17	Table sauce, . . .	1	—	1
Wintergreen, . . .	—	1	1	Tea, . . .	2	—	2
Honey, . . .	3	—	3	Vinegar, . . .	11	4	15
Jams and jellies, . . .	5	1	6	Wine, . . .	1	1	2
Malt liquor, . . .	2	—	2	Total, . . .	482	114	596
Maple sugar, . . .	7	4	11				

The samples of drugs found to be adulterated were alcohol, camphor liniment, quinine pills, spirit of nitrous ether, spirit of peppermint, ginger and several proprietary medicines.

The cities and towns in which samples were collected were: Attleborough, Boston, Cambridge, Everett, Fairhaven, Fall River, Haverhill, Lawrence, Lowell, Lynn, Malden, Marlborough, Medford, Melrose, New Bedford, Newton, North Andover, Norwood, Randolph, Saugus, Somerset, Somerville, Taunton and Worcester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Ten convictions were secured during the month of February, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Grocers' Supply Company Limited.	Fall River, .	Cider vinegar (acid, 3.88).
2	Murry Bowen, . . .	Attleborough, .	Milk (total solids, 11.50). <sup>1, 2</sup>
3	Manuel F. Simons, . . .	Somerset, .	Milk (total solids, 9.54). <sup>1</sup>
4	Carl A. Weitz, . . .	Boston, .	Pork sausage (contained cereal).
5	Belanic L. Roberts, . . .	Worcester, .	Sausages (contained corn starch).
6	Morris Alpert, . . .	Boston, .	Sausage (contained sulphurous acid).
7	Nicholas H. Nevler, . . .	Boston, .	Spirit of peppermint (46 per cent. U. S. P.). <sup>2</sup>
8	George F. Ramponi, . . .	Boston, .	Spirit of peppermint (68 per cent. U. S. P.). <sup>2</sup>
9	Grocers' Supply Company Limited.	Fall River, .	Tomato catsup (contained compound of benzoic acid).
10	Jaynes Drug Company, . .	Boston, .	Wood alcohol.

<sup>1</sup> Watered.

<sup>2</sup>Appealed.

Fines imposed, \$400.

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR FEBRUARY, 1912.**

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
16479	Bailey Apple Cider, (compound). Van Dyk's Sweet Lunch Cocoa.	1118 Bedford Street, James Van Dyk Company, New York,	Chiefly carbonated sugar solution, containing about 30 per cent. cider. Contained cane sugar.
16586	Coffee, 'Eastern Spe- cial,' "A combina- tion of good coffee and fine chicory."	L. D. Margolis Company, Boston, Mass.,	Contained chicory, wheat and coffee.
9249 R	Coffee, 'Empire Spe- cial' is a blend of good coffee and fine chic- ory."	Empire Grocery Company, Boston, Mass.,	Contained chicory, wheat and coffee.
9247 R	Coffee, "Semi-i-cup Brand contains good coffee with chicory added."	I. D. Margolis, Boston, Mass.,	Contained chicory, wheat and coffee.
9243 R	Coffee, "Ideal" Maraschino Cherries.	Oriental Tea Company, Boston, Mass.,	Contained chicory, wheat and coffee. Contained sulphur dioxide.
9233 R	"Brookside" pure cider vinegar.	John T. Connor Company, Boston, Mass.,	Low in acids and solids; acid, 4.03 per cent.; solids, 1.74 per cent.
16442	Strictly pure cider vine- gar.	The C. W. Walker Company, Boston, Mass.,	Low in solids; solids, 1.61 per cent.
q 8476	Sauterne.		Contained sulphur dioxide.
16444	Extract of vanilla.	Italian-Swiss Colony, Vineyards Asti and Medera, Cal.,	No vanilla present. Sample was tincture of myrrh.
16464	Extract of wintergreen,	Geo. F. Sanborn & Son Company, Roxbury, Mass.,	Contained 1.98 per cent. wintergreen oil; low in oil.
16451		E. Hartshorn & Sons, Boston, Mass.,	
924 O			

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC.—Concluded.**

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.			
			Fat	Protein	Solids	Water
16493	Spirit of peppermint, Daveaport's Cure for Asthma,	W. F. Hahn, Newton, Mass., Wm. Daveaport, Providence, R. I., .	. . . . .	. . . . .	. . . . .	. . . . .
626 O	Heimbold's Fluid Ex- tract of Buchu.	W. H. Heimbold, .	. . . . .	. . . . .	. . . . .	. . . . .
630 O	Knight's Asthma Cure,	L. A. Knight, Cincinnati, O., .	. . . . .	. . . . .	. . . . .	. . . . .
634 O	Ely's Pineola Balsam, .	Ely Bros., New York, .	. . . . .	. . . . .	. . . . .	. . . . .
636 O	Milk, . . . . .	Daniel M. Brindamour, Attleborough, Mass., .	. . . . .	. . . . .	. . . . .	. . . . .
q 8430	Milk, . . . . .	Carl C. Stanford, East Lynn, Mass., .	. . . . .	. . . . .	. . . . .	. . . . .
q 8470	Milk, . . . . .	Omfrey Kolochzey, Taunton, Mass., .	. . . . .	. . . . .	. . . . .	. . . . .
1030 O	Milk, . . . . .	Frank W. Gross, Melrose, Mass., .	. . . . .	. . . . .	. . . . .	. . . . .
q 8521	Milk, . . . . .	Ralph C. Varley, Melrose, Mass., .	. . . . .	. . . . .	. . . . .	. . . . .
q 8529						

## INSPECTION OF DAIRIES.

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During the month of February, 1912, 79 dairies supplying milk for public sale in Massachusetts were examined. All but 31 of this number are situated in New Hampshire. The Massachusetts dairies yielded the following data:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Dedham, . . . .	1	1	100.00	—	—
Marshfield, . . . .	10	7	70.00	3	30.00
Second inspection, . . .	3	3	100.00	—	—
Third inspection, . . .	8	5	62.50	3	37.50
Monson, . . . .	—	—	—	—	—
Second inspection, . . .	1	1	100.00	—	—
Northbridge, . . . .	18	6	33.33	12	66.67
Second inspection, . . .	7	1	14.29	6	85.71
Total number of Massachusetts dairies examined, . . . . .					48
Number found to be free from objectionable conditions, . . . . .					24
Number concerning which letters were sent, . . . . .					24
Total number of conditions to which attention was called, . . . . .					64
Percentage of dairies which passed inspection, . . . . .					50.00

Included in the total number of Massachusetts dairies were 28 which had started recently in the milk-producing business and were inspected for the first time.

In addition to the above dairies, 7 were visited at which the sale of milk had been discontinued.

The names of the owners of the dairies in Massachusetts found to be worthy of commendation follow:—

### DEDHAM.

#### *Class A.*

Cochrane Brothers.

### MARSHFIELD.

#### *Class A.*

Nelson, H. W.

#### *Class B.*

Flavill, J. H.* †	Rand, Fred * †	Taylor Leonard. ‡ †
Hatch, F. W. * †	Sears, Mrs. George	Thomas George
Kent, M. H. ‡ §	Searvens, William S. ‡ §	Thomas, Huntley L. ‡ §
Macomber, Herbert	Stoddard, Charles	Wright, Henry
Osborn, Augustus ‡ §	Strange, D. F.	

\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

§ Reported favorably on all previous inspections.

## MONSON.

*Class B.*

McDermott, J. W.\*

## NORTHBRIDGE.

*Class A,*

Castle Hill Farm.

Whitinsville Cotton Mill Farm.

*Class B.*

Aldrich, Frank

Hammond, H. F.

Oelschlegal Brothers.

Ellis, Mrs. Clara S.\*

Henry, James

## NEW HAMPSHIRE DAIRIES.

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Durham, . . . . .	2	2	100.00	-	-
Exeter, . . . . .	8	7	87.50	1	12.50
Hampton Falls, . . . . .	1	1	100.00	-	-
Lee, . . . . .	2	2	100.00	-	-
Newmarket, . . . . .	18	11	61.11	7	38.89

Total number of New Hampshire dairies examined, . . . . . 31  
 Number found to be free from objectionable conditions, . . . . . 23  
 Number concerning which letters were sent, . . . . . 8  
 Total number of conditions to which attention was called, . . . . . 27  
 Percentage of dairies which passed inspection, . . . . . 74.19

In addition to the above, 8 dairies were visited at which the sale of milk had been discontinued.

PROPRIETARY PREPARATIONS ADVERTISED AS UNSAL-  
ABLE AT RETAIL IN FEBRUARY, 1912.

Burden's Cholera Cordial. Burden & Co., Wholesale and Retail Druggists, 308 Hanover Street, corner Prince, Boston, Mass. (No statement as to presence of alcohol.)

Dr. James' One Minute Cure. Home office, 526 Tremont Street, Boston, Mass. (No statement as to the presence of alcohol.)

\* Second inspection.

## ACTS OF 1912, CHAPTER 104.

## AN ACT RELATIVE TO SPECIFIC MATERIAL FOR ANTI-TYPHOID INOCULATION TO BE FURNISHED BY THE STATE BOARD OF HEALTH.

*Be it enacted, etc., as follows:*

Section four of chapter seventy-five of the Revised Laws, as amended by chapter four hundred and eighty of the acts of the year nineteen hundred and three, is hereby further amended by inserting after the word "lymph", in the sixteenth line, the words:— and such specific material for protective inoculation against typhoid fever and other diseases as said board may, from time to time, deem it advisable to produce and distribute,— so as to read as follows:— *Section 4.* Said board shall take cognizance of the interests of health and life among the citizens of the commonwealth, make sanitary investigations and inquiries relative to the causes of disease, and especially of epidemics, the sources of mortality and the effects of localities, employments, conditions and circumstances on the public health, and relative to the sale of drugs and food and the adulterations thereof; and shall gather such information relative thereto as it considers proper for diffusion among the people. It shall advise the government relative to the location and other sanitary conditions of any public institution; and shall have oversight of inland waters, sources of water supply and vaccine institutions, and may, for the use of the people of the commonwealth, produce and distribute antitoxin and vaccine lymph and such specific material for protective inoculation against typhoid fever and other diseases as said board may, from time to time, deem it advisable to produce and distribute. It shall annually examine all main outlets of sewers and drainage of cities and towns of the commonwealth, and the effect of sewage disposal, and shall annually report thereon to the general court, with such recommendations for the protection of the interests of persons and property and for the prevention of offensive odors and objectionable conditions as it considers expedient. [Approved February 16, 1912.]

## ACTS OF 1912, CHAPTER 151.

## AN ACT RELATIVE TO THE MAINTENANCE OF HOSPITALS BY CITIES AND TOWNS.

*Be it enacted, etc., as follows:*

SECTION 1. Section thirty-five of chapter seventy-five of the Revised Laws, as amended by chapter six hundred and thirteen of the acts of the year nineteen hundred and eleven, is hereby further amended by striking out the said section and inserting in place thereof the following:— *Section 35.* Each city shall, and each town may, and upon the request of the state board of health, shall, establish and maintain constantly within its limits one or more hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health as defined by the state board of health, unless there already exists in the city

or town a hospital for the reception of persons ill with such diseases, which is satisfactory to the state board of health, or unless some arrangement which is satisfactory to the state board of health is made between neighboring cities or neighboring towns, or neighboring cities and towns, for the care of persons having such diseases. All such hospitals established and maintained by cities or towns shall be subject to the orders and regulations of the boards of health of the cities or towns in which they are respectively situated. Plans for the construction of the said hospitals shall be approved by the state board of health before the hospitals are constructed, and the state inspectors of health shall annually make such examination of said hospitals as in the opinion of the state board of health may be necessary. A city or town which upon the request of the state board of health refuses or neglects to establish and maintain such a hospital shall forfeit not more than five hundred dollars for each refusal or neglect: *provided, however,* that if, in the opinion of the boards of health of two or more adjoining cities or towns or a city and an adjoining town or towns, such hospitals can advantageously be established and maintained in common, the authorities of the said cities or towns may, subject to the approval of the state board of health, enter into such agreements as shall be deemed necessary for the establishment and maintenance of the same.

SECTION 2. This act shall take effect upon its passage. [Approved February 24, 1912.]

ACTS OF 1912, CHAPTER 155.

AN ACT RELATIVE TO THE PRACTICE OF MANICURING AND MASSAGE AND THE GIVING OF VAPOR BATHS.

*Be it enacted, etc., as follows:*

Section one of chapter four hundred and forty-three of the acts of the year nineteen hundred and eleven is hereby amended by adding at the end thereof the following:— *provided,* that a person duly licensed to carry on massage, or to conduct an establishment for the giving of vapor baths, in the city or town in which he lives or carries on business, may attend patients at the request of a physician in any city or town in this commonwealth without taking out an additional license,— so as to read as follows:— *Section 1.* It shall be unlawful for any person to practise manicuring or massage or to conduct an establishment for the giving of vapor baths for hire or reward or to advertise or hold himself out as being engaged in the business of manicuring, massage or the giving of said baths without receiving a license therefor from the board of health of the city or town in which the said occupation is to be carried on. The board of health may grant the license upon such terms and conditions, and may make such rules and regulations in regard to the carrying on of the occupation so licensed, as it may deem proper, and may revoke any license granted by it for such cause as it may deem sufficient, and without a hearing: *provided,* that a person duly licensed to carry on massage, or to conduct an establishment for the giving of vapor

baths, in the city or town in which he lives or carries on business, may attend patients at the request of a physician in any city or town in this commonwealth without taking out an additional license. [Approved February 24, 1912.

## THE MAINTENANCE OF ISOLATION HOSPITALS BY CITIES AND TOWNS IN MASSACHUSETTS FOR THE RECEPTION OF PERSONS ILL WITH DISEASES DANGEROUS TO THE PUBLIC HEALTH.<sup>1</sup>

BY THE ASSISTANT TO THE SECRETARY OF THE BOARD.

### EXISTING LAWS ENACTED PREVIOUS TO 1911 RELATIVE TO ACCOMMODATIONS FOR PERSONS WITH DANGEROUS DISEASES.

REVISED LAWS, CHAPTER 75, SECTION 35.

A town may establish hospitals within its limits for the treatment of diseases which are dangerous to the public health. Such hospitals shall be subject to the orders and regulations of the board of health.

REVISED LAWS, CHAPTER 75, SECTION 37.

Each city shall establish and constantly be provided, within its limits, with one or more isolation hospitals for the reception of persons having smallpox or any other disease dangerous to the public health. Such hospitals shall be subject to the orders and regulations of the boards of health of the cities in which they are respectively situated. A city which, upon the request of the state board of health, refuses or neglects to comply with the provisions of this section, shall forfeit not more than five hundred dollars for each refusal or neglect: *provided, however,* that if, in the opinion of the boards of health of two or more adjoining cities or towns, such hospitals can advantageously be established and maintained in common, the authorities of the said cities or towns may enter into such agreements as may be necessary for the establishment and maintenance of the same.

ACTS OF 1902, CHAPTER 206, SECTION 1.

The board of health of any city or town which has established or which may hereafter establish within its limits a hospital for the reception of persons having smallpox or any other disease dangerous to the public health,

<sup>1</sup> Following is the list of diseases declared by the State Board of Health to be dangerous to the public health, and hence notifiable under the provisions of sections 49 and 50, chapter 75, Revised Laws: —

Actinomycosis.	Leprosy.	Tetanus.	Varicella.
Asiatic cholera.	Malignant pustule.	Trichinosis.	Whooping cough.
Cerebro-spinal meningitis.	Measles.	Tuberculosis.	Yellow fever.
Diphtheria.	Scarlet fever.	Typhoid fever.	
Glanders.	Smallpox.	Typhus fever.	
Ophthalmia neonatorum and trachoma were made notifiable on May 6, 1909, and anterior poliomyelitis on Nov. 4, 1909.			

may receive for care and treatment in such hospital persons from an adjoining town who are infected with any of said diseases.

REVISED LAWS, CHAPTER 75, SECTION 36.

If a disease which is dangerous to the public health breaks out in a town, or if a person is infected or lately has been infected with any such disease, the board of health shall immediately provide such hospital or place of reception, and such nurses and other assistance and necessaries, as is judged best for his accommodation and for the safety of the inhabitants, and the same shall be subject to the regulations of the board. The board may cause any sick or infected person to be removed to such hospital or place, if it can be done without danger to his health; otherwise the house or place in which he remains shall be considered as a hospital, and all persons residing in or any way connected therewith shall be subject to the regulations of the said board, and, if necessary, persons in the neighborhood may be removed. When the board of health of a city or town shall deem it necessary in the interest of the public health to require a resident wage-earner to remain within such house or place, or otherwise to interfere with the following of his employment, he shall receive from such city or town during the period of his restraint compensation to the extent of three-fourths of his regular wages: *provided, however,* that the amount so received shall not exceed two dollars for each working day.

LAWS ENACTED DURING 1911 RELATIVE TO ISOLATION, INCLUDING TUBERCULOSIS, HOSPITALS.

ACTS OF 1911, CHAPTER 597.

SECTION 1. Every city or town which establishes and maintains a tuberculosis hospital shall be entitled to receive from the commonwealth a subsidy of five dollars per week for each patient who is unable to pay for his support, or whose kindred bound by law to maintain him are unable to pay for the same, but the city or town shall not become entitled to this subsidy unless, upon examination authorized by the trustees of hospitals for consumptives, the sputum of such patients be found to contain bacilli of tuberculosis, and unless the hospital be subject to the inspection of, and be approved by, said trustees.

SECTION 2. Said trustees of hospitals for consumptives shall certify in the case of each hospital approved by them as provided in the preceding section the number of patients for whom the city or town is entitled to the subsidy, and upon such certification the subsidy shall be paid from the treasury of the commonwealth in the same manner in which other claims against the commonwealth are paid.

SECTION 3. This act shall take effect upon its passage.

## ACTS OF 1911, CHAPTER 613.

SECTION 1. Chapter seventy-five of the Revised Laws is hereby amended by striking out section thirty-five and inserting in place thereof the following:— *Section 35.* Each city and town shall establish and constantly maintain within its limits one or more isolation hospitals for the reception of persons having diseases dangerous to the public health as defined by the state board of health, including a tuberculosis hospital or tuberculosis wards. Plans for the construction of such hospitals shall be approved by the state board of health, and said hospitals shall be inspected by the state board of health or by its accredited agent, at least twice in every year. But if, in the opinion of the state board of health, two or more adjoining towns or a city and contiguous towns can advantageously establish and maintain such hospitals in common, the authorities of said towns or of such cities and contiguous towns may enter into such agreements as may be necessary for the establishment and maintenance of the same. Any city or town which upon the request of the state board of health refuses or neglects to comply with the provisions of this section shall forfeit not less than five hundred dollars for every such refusal or neglect.

SECTION 2. This act shall take effect upon its passage.

Both of the laws, enacted in June, 1911, relating to the building and the maintenance of hospitals, were printed in the June<sup>1</sup> bulletin of the State Board of Health. A copy of this bulletin was sent to the board of health or health officials of every city and town in the Commonwealth. A copy was also sent to each State Inspector of Health. This gave opportunity for the State Inspectors of Health to consult with the local authorities concerning the provisions of chapter 613 relative to the maintenance of isolation hospitals, including a tuberculosis hospital or tuberculosis wards, by cities and towns. Three months later, *i.e.*, in October, uniform inquiry was made by the State Inspectors of Health, following the phraseology of the law as to local hospital provisions throughout the Commonwealth, specifically as to (1) what cities and towns were at that time maintaining one or more isolation hospitals, including a tuberculosis hospital or tuberculosis wards; (2) what two or more adjoining towns and city or contiguous towns were maintaining such hospitals in common; and (3) what cities or towns should be requested (*a*) to establish and maintain such hospitals, or (*b*) to establish and maintain such hospitals in common.

Resulting from the co-operation of the State Inspectors of Health with the local boards of health, a number of communities took active steps towards its enforcement. In five instances plans for hospital construc-

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<sup>1</sup> Published in July.

tion were presented at the office of the State Board of Health for consideration, and in two instances were acted upon and approved by the State Board of Health. The inquiry brought two main results: (1) it showed that although the cities and larger towns, for the most part, had some well-defined plan for the care of hospital patients ill with diseases dangerous to the public health, but few met the technical requirements of the new law which provided specifically that hospitals must be established and constantly maintained by the cities and towns; and (2) it led to the exposure of many practical difficulties confronting the local communities in their attempt to comply with the law as it was phrased.

Later on, effort was made to reach all the towns in the Commonwealth for the purpose of interviewing their governing bodies and representative citizens in regard to the enforcement of the law. At various conferences called by State Inspectors of Health in several districts the attendance was good. The first conference was in the Cape district. The plan suggested itself to Dr. MacKnight, State Inspector of Health of this district. Through the courtesy of the Hon. Eben C. Keith, a member of the Governor's Council, representatives of the local boards of health met at Sagamore on Monday, December 4. All of the Cape boards, namely 24, were represented at this conference. Copies of the isolation hospital law were presented to the members present and a general discussion followed. The first criticism was the drastic and mandatory nature of the act. There was difference of opinion as to whether the isolation hospital and tuberculosis hospital should be in combination or separate; whether the tuberculosis hospital should be one wing and the isolation hospital another wing; what sort of central arrangement might be made for the accommodation of a nurse or physician; and other similar questions. Information was desired as to the general purpose of the law, especially in towns where there had been but very few cases of contagious or notifiable diseases within several years, for instance, Cuttyhunk, Gosnold and Truro. Truro, for example, had one case of tuberculosis at the present time which was costing the town \$15 per week, —  $\frac{1}{10}$  of the annual tax income. The town of Mashpee was supporting two cases of tuberculosis at the Sassaquin Sanatorium in New Bedford, which was privately conducted at an expense of \$15 to \$18 per week. The town of Brewster was recorded as being unable to support a hospital and unwilling to enter into an agreement with other towns to "establish and constantly maintain" in common such a hospital. The various representatives of the local government bodies organized themselves at this meeting into a district association, and proposed calling another meeting of the Cape boards of health early in

January, 1912, the object of this meeting being a further consideration of the law, with the idea of ascertaining exactly the number of towns willing to undertake the establishment and maintenance themselves, or the number willing to enter into an alliance. It was pointed out that boards of health had no power to enter into agreements or incur expenses in the absence of an appropriation for that purpose without the consent of the townspeople at the annual town meeting. It was felt that the matter was sprung upon the boards of health rather suddenly; consequently, they are unable to give a final answer at the present time. It was the concensus of opinion that not enough consideration was given the matter previous to the enactment of the law as to the actual needs in the small towns for provisions to care for persons ill with contagious diseases; and it was asserted that the enforcement of the law as it was enacted must of necessity entail hardship, since the tax rates were quite high and the population not sufficiently large to meet the situation without the impoverishment of the towns. Considerable discussion developed as to whether, if the hospitals were established, they were to be maintained daily or whether they could be equipped and closed when not required and opened as occasion arose.

A similar conference was held at Woods Hole on Tuesday, December 5. An interesting fact in connection with this meeting was that two members of the board of health of a remote town made a trip of 18 miles each way in a motor boat to attend the meeting. In spite of this interest, however, they felt that they would be unable to persuade the tax payers at the town meeting to vote an appropriation for a hospital which all agreed was unnecessary.

The next meeting of the Cape district boards of health was held at Barnstable on Jan. 20, 1912. This was a joint conference, at which all the Cape boards and selectmen were represented with the exception of those of two towns. Most of the discussion was in the line of objecting to the provisions of the isolation hospital act; for example, the unreasonable nature of the act by the hardship forced upon the town, its unnecessary mandatory features, its impracticability, the result of impoverishment of the towns, inability to comply with the request of the State Board of Health, if one was made, impossibility of collecting fines, advisability of county sanatoria and need of amending or repealing the act. It was finally moved and seconded that the chairman of the selectmen and boards of health should appear before the State Board of Health in behalf of their towns against the enforcement of the act. It was also moved and seconded that representatives be asked to appear at the public hearings of the Legislature in behalf of amendments to the

act. Conferences of a similar nature were held in some other parts of the State.

As the result of such conferences and personal interviews with local boards of health, city and town governing boards or officials, including some city and town solicitors, local physicians, including some city physicians, and various representative citizens, for example, leading business men, members of school committees, district nurses, secretaries or members of tuberculosis associations or private relief organizations or improvement associations, members of local hospital staffs, representatives of women's organizations, and others, the State Board of Health are in possession of the facts as to existing local hospital provisions in every city of the Commonwealth, in all the larger towns, in nearly all the smaller towns with a population of two thousand inhabitants or over, and in many of the smallest towns.

Following is a brief report submitted by State Inspectors of Health on existing provisions or methods relating to the care of persons ill with communicable diseases in need of hospital treatment in the cities of the Commonwealth:—

#### BOSTON. Population, 686,092.

Feb. 23, 1912.

The Boston Consumptives Hospital consists of an out-patient department where patients come for treatment and are followed up in their homes by a staff of 25 visiting nurses; a hospital with 150 beds for advanced cases and 50 cottage beds for advanced ambulatory cases. The day camp connected with the hospital has accommodated as many as from 160 to 175 patients. The isolation hospital, known as the south department, is a part of the Boston City Hospital. There are three pavilions, one for scarlet fever, one for diphtheria and one for measles. There are 125 beds in each of the scarlet fever and diphtheria pavilions and 60 beds in the measles pavilion. The hospital does not accept any cases residing out of the city. Persons having a legal settlement in Boston pay \$7 per week. Cases are sent to the south department by the attending physicians or by the board of health when the isolation of the patient at his home is not satisfactory to the board.

#### WORCESTER. Population, 145,986.

Nov. 28, 1911. Dec. 5, 1911. Jan. 23, 1912.

The city of Worcester maintains an isolation hospital, but not a tuberculosis ward or hospital. Plans for a new tuberculosis hospital are under consideration, although it is not known how much a demand there is for such a hospital or how much it will be used. Special effort is to be made to make the hospital attractive and to keep the patients contented and in this way keep the advanced cases under direct supervision. In regard to scarlet fever

and diphtheria, it is customary to urge patients ill with such diseases to enter the isolation hospital, although they are not compelled to do so, except in extreme instances. As to co-operating with neighboring towns the attitude of the local board of health will be to allow such towns to use the isolation and the new tuberculosis hospital, provided the payment of the bill is guaranteed, when there are vacant beds. In case of epidemics in Worcester the smaller towns must make other provisions for the care of such cases.

**FALL RIVER.** Population, 119,295.

February, 1912.

The isolation hospital completed in 1910 is now occupied by persons ill with tuberculosis to the extent that the basement of the building and tents outside the building are in use. For patients ill with diphtheria, scarlet fever, and other diseases dangerous to the public health the only building in use is a farm house on Highland Avenue, situated a short distance from the middle of the highway. In the event of an outbreak of smallpox, unless the Highland Avenue place should be vacated, it would be necessary to quarantine the premises in which the smallpox cases developed, or to remove the scarlet fever and diphtheria patients to the contagious hospital building now used exclusively by tuberculosis patients, provided there is room in this hospital. Otherwise some building would have to be seized and used for hospital purposes during the outbreak.

**LOWELL.** Population, 106,294.

Nov. 17, 1911. Jan. 31, 1912.

A commission was appointed by the last city government early in its session to look into the matter of having a hospital for contagious diseases in Lowell, and to report, but this commission was not unanimous in any plan.

The city has three general hospitals besides hospital buildings at the farm. Two of the hospitals have out-patient departments and a clinic is maintained by the board of charities under the care of the ward physicians who are expected to treat the poor in their respective wards. The board of health would like a hospital. They are to hold a public hearing on February 1 relative to the establishment of the same.

**CAMBRIDGE.** Population, 104,839.

Oct. 27, 1911.

A diphtheria hospital established in 1899 with a capacity of 23 beds is maintained by the board of health. All scarlet fever patients requiring hospital treatment are transferred to the Massachusetts Homœopathic Hospital, Boston, contagious disease department, the board of health having an agreement as to price with this institution. This city established in January, 1908, a tuberculosis hospital with a capacity of 60 patients located

on Concord Avenue under the control of the local board of health. This building reached its capacity, and an addition accommodating 30 patients has since been provided by the city government.

**NEW BEDFORD.** Population, 96,652.

Nov. 28, 1911.

Although the city of New Bedford has had an isolation hospital for several years, the hospital has not been much used. Until recently the custom has been to quarantine and treat at their homes persons ill with diseases dangerous to the public health.

**LYNN.** Population, 89,336.

Oct. 31, 1911. Dec. 6, 1911.

The city of Lynn maintains a hospital for persons ill with diphtheria and scarlet fever. The city also has a building which has been used for the care of persons stricken with smallpox. At the present time a building that was built for a children's home is now being remodeled and adapted for the care of persons ill with tuberculosis. This building will have a capacity of about 70 patients. At the present time the building which has been used for the care of smallpox patients is utilized in connection with the children's home building that is now being remodeled for a tuberculosis hospital. The children's home building was erected in 1881, but the additions recently made for the care of tuberculosis patients included extensive piazza provisions outside of the main building and the remodeling of rooms. The building has been remodeled at an expense of about \$10,000 by the city, and will be under the control of the board of health in addition to the hospital now maintained by the city for persons ill with scarlet fever and diphtheria. Physicians at the Lynn hospital examine patients who they believe have any disease of the lungs on two days each week free of charge.

**SPRINGFIELD.** Population, 88,926.

Oct. 21, 1911. December, 1911.

The city of Springfield has a hospital for persons stricken with smallpox. There is now building an isolation hospital including a hospital for persons ill with tuberculosis. The tuberculosis hospital will be ready for occupancy early in 1912, and will accommodate patients in 2 10-bed wards and 5 private rooms. The hospital for infectious diseases other than tuberculosis will accommodate 30 patients in 4 divisions, with a possibility of adding 40 more by the use of 4 enclosed porches if required. All these buildings are on the grounds of the city almshouse. It is the custom to keep a force of nurses and an orderly on duty at the infectious disease hospital regardless of whether there are any patients. During the time of building and repair the board of health have, with few exceptions, been caring for patients at the homes of the patients. The local anti-tuberculosis society maintains

a 12-room house which it operates as a hospital for the advanced indigent cases. They also maintain a clinic to which less advanced cases come for examination and advice. A nurse who is connected with this work follows up the cases at their homes. Arrangements are made with 3 district physicians so that people who wish may make appointments for examination at other times than when the clinic meets. The policy of the Springfield board of health is to care for all patients at their homes if possible. Contagious cases have been taken from the surrounding towns in the past. It has been the custom for the board of health to take patients with diphtheria and scarlet fever from outside the city, when they had available room, charging them at the rate of \$10 per week.

LAWRENCE. Population, 85,892.

Oct. 9, 1911.

The city of Lawrence maintains a tuberculosis hospital which at the present time appears to have the capacity sufficient to care not only for hospital patients among the residents of Lawrence, but for patients in some of the neighboring towns. The city does not maintain a hospital for the care of persons having other communicable diseases than tuberculosis. Patients, however, are received at the Lawrence General Hospital.

SOMERVILLE. Population, 77,236.

Oct. 27, 1911.

This city, in 1905, remodeled a building located at the corner of Broadway and North Street, for the care of cases of scarlet fever and diphtheria. In October, 1910, the city commenced the erection of a tuberculosis ward on land adjoining the contagious disease hospital, and this building was completed and opened for the care of patients in March, 1911. The capacity of the contagious hospital is 35 cases of scarlet fever and 25 cases of diphtheria, and the capacity in the tuberculosis ward, 24 patients. This institution is under the control of the board of health and maintained by an annual appropriation from the city government. Since this hospital has been in operation it has frequently taken patients from outside cities and towns when requested, but no definite agreement has been made with these places, except as to the cost of each patient per week.

HOLYOKE. Population, 57,730.

Oct. 21, 1911. Feb. 3, 1912.

The city of Holyoke maintains an isolation hospital. It is, however, inadequate, and plans have been drawn to provide a new building. There is a new tuberculosis hospital which it is expected will be opened some time next month.

A new tuberculosis hospital with a capacity for 28 persons is just opened. Plans are now drawn in accordance with the mayor's recom-

mendation for a new isolation hospital to accommodate from 75 to 100 patients. The new tuberculosis hospital is finely situated on a hill on the outskirts of the city. Plans for the new isolation hospital are made and paid for. They are now in the hands of the board of public works.

BROCKTON. Population, 56,878.

Dec. 20, 1911.

The board of health of Brockton are making plans for such a hospital as is required by chapter 613 of the Acts of 1911. It is understood that the matter will be placed before the city government early in the year.

MALDEN. Population, 44,404.

Oct. 27, 1911.

The board of health from an appropriation made by the city government three years ago erected a concrete building, for cases of scarlet fever and diphtheria, accommodating 20 patients. This hospital maintained by the board of health receives patients from adjoining cities and towns. Everett, Reading, Melrose and Winchester frequently send cases for treatment. During the past year the city government appropriated \$12,000 for the erection of a tuberculosis hospital which, it was expected, was to be erected upon grounds adjacent to the hospital for contagious diseases. As the land adjoining, however, was in the city of Melrose, certain residents of Melrose objected to the erection of the hospital. The objection on the part of the Melrose authorities is based on section 39 of chapter 75 of the Revised Laws: "such hospitals shall not be established within one hundred rods of an inhabited dwelling house situated in an adjoining city or town, without the consent of such city or town."

HAVERHILL. Population, 44,115.

Oct. 9, 1911.

The city of Haverhill has provisions for the care of persons ill with communicable diseases, including tuberculosis, and is about to erect modern hospitals for the care of all such diseases. The municipal council of Haverhill has received and adopted plans for the construction of a hospital for the reception of persons having diseases dangerous to the public health, including a tuberculosis hospital. At the present time the city cares for persons ill with communicable diseases in shacks on the grounds of the city hospital.

SALEM. Population, 43,697.

Oct. 31, 1911. Dec. 6, 1911. Dec. 22, 1911.

About four years ago the board of health of Salem established a tuberculosis hospital in a remodeled building formerly used as an insane hospital, located on grounds adjoining the city almshouse. This building is of brick construction located away from the thickly populated part of the city on a

point of land which overlooks the harbor. Two balconies were added to the brick part of the building in order that patients might receive out-of-door treatment. The hospital has a capacity of 20 patients. The greatest number that have been in the hospital at any one time is 14. During the present year 22 new cases have been admitted, 5 being the number in the hospital at the present time. There is an anti-tuberculosis society in town, and a day camp is maintained from May 1 to October 10 on grounds adjacent to the tuberculosis hospital, the board of health furnishing the meals to the day camp patients from the hospital. The average daily capacity is 12 patients. In addition to these provisions the board of health also employ a day nurse who visits tuberculosis patients.

**NEWTON.** Population, 39,806.

Jan. 2, 1912.

In the city of Newton tuberculosis patients may be sent to the isolation hospital, and in some instances be cared for there, or remain pending departure for some State sanatorium. Several years ago an out-patient clinic was maintained for nearly a year at the Newton Hospital with the result that only 3 or 4 patients applied for treatment, so that it was discontinued.

**FITCHBURG.** Population, 37,826.

December, 1911.

It is the opinion of the Fitchburg board of health that an isolation hospital, including a tuberculosis hospital, should be established and maintained in the near future, and the board has so recommended in its report to the city government in January, 1912.

**TAUNTON.** Population, 34,259.

Oct. 6, 1911. Dec. 29, 1911.

In October the board of health sent a communication to the city council to consider the matter. The need of a tuberculosis hospital was also explained to the finance committee. Local opinion was to the effect that it would not be practical for the city to enter into any agreement with neighboring towns. It is generally conceded, however, that a tuberculosis hospital is needed for Taunton.

**EVERETT.** Population 33,484.

Oct. 27, 1911.

This city has no hospital in active use for diseases dangerous to the public health. Some ten or twelve years ago the board took a building located on Broadway, and outside of the thickly settled part of the city, as a smallpox hospital. This building it still owns, but does not maintain, it being at the present time rented to a caretaker. It was the intention of the board of health to use the building subsequently for a contagious disease hospital,

but on account of popular opinion and opposition it has never been opened for that purpose. The city has sent many cases of scarlet fever and diphtheria to the Malden hospital, and it also provides for the care of cases of tuberculosis by employing the city physician to attend patients at their homes. The board of health is paying for the maintenance of 6 patients at the different State sanatoria.

**QUINCY.** Population, 32,642.

Oct. 6, 1911. Dec. 5, 1911. Dec. 29, 1911.

The board of health of the city of Quincy has been sending many patients with contagious diseases to the Massachusetts Homœopathic Hospital, costing the city over \$5,000 last year. There is a decided feeling in the community that steps should be taken toward the establishment of an isolation hospital. Some years ago the trustees of the city hospital offered to give the city a piece of land for the establishment of a contagious hospital. The matter fell through because of inability to agree upon details of administration. A tuberculosis camp which can accommodate 10 permanent patients was established two years ago by the local anti-tuberculosis society at a cost of about \$3,500. The city made arrangements with the camp to take care of their tubercular patients. Under the existing arrangement, it will be noted that the city of Quincy is not entitled to the subsidy of \$5 per week.

**CHELSEA.** Population, 32,452.

Nov. 20, 1911.

Previous to the Chelsea fire of 1907 the Frost Hospital in Chelsea had wards for the isolation of scarlet fever and diphtheria. The hospital was destroyed by the fire and has been rebuilt, but without provisions for isolation wards. The Chelsea board of health, recognizing the need of an isolation hospital and tuberculosis hospital, has been agitating the question for over a year. Recently the matter was brought to the attention of the Board of Control, who had an architect make plans for the erection of an isolation hospital by the city on land adjoining the Frost Hospital. It was proposed to turn the hospital over to the trustees of the Frost Hospital, to run it in conjunction with the general hospital. The city has a hospital for patients ill with smallpox.

**PITTSFIELD.** Population, 32,121.

Oct. 12, 1911. Jan. 12, 1912.

The city of Pittsfield is seeking to amend the law so that it may contract with existing private organizations to care for its contagious cases. The only isolation hospital established by the city is a building on the poor farm, used for persons stricken with smallpox.

## WALTHAM. Population, 27,834.

Oct. 27, 1911. Jan. 1, 1912.

With the exception of smallpox, all cases of dangerous diseases are cared for at the Waltham hospital. Cases of smallpox are cared for in a small building owned by the city. Recently the hospital has made arrangements to care for cases of tuberculosis, and at the present time has a capacity for 16 patients who are accommodated in open-air pavilions, with a roof, open on all sides but screened and protected by awnings when necessary. Four other rooms formerly used as a maternity ward are now available for patients who are not able to be out of doors all of the time.

Although this city does not technically comply with the law, patients with tuberculosis are cared for at the Waltham Hospital, where proper facilities have been provided. It does not seem necessary, while the Waltham Hospital is maintaining a tuberculosis hospital which appears adequate for present needs, for the city through its board of health to maintain another one.

## CHICOPEE. Population, 25,401.

Oct. 21, 1911. January, 1912.

A manufacturing city with a large foreign population. Has no hospital of any sort. The general hospital work goes to Springfield or Holyoke hospitals. Infectious cases have been taken to the isolation hospital in Springfield. The agent of the board of health stated that a contagious disease hospital would be much used, but that he believed a tuberculosis hospital which would take care of persons in the advanced stage of the disease would do the most good. He stated that it was inhuman in many instances to take such patients away from their home surroundings, and that a hospital in their own town would solve the problem. It was the concensus of local opinion that the city needed an isolation hospital including a tuberculosis hospital.

## GLOUCESTER. Population, 24,398.

Oct. 31, 1911. Dec. 29, 1911.

The city of Gloucester has a hospital for the care of persons stricken with smallpox. The overseers of the poor maintain a small hospital of 12 beds at the city almshouse for the care of poor patients in the city. At the present time there are 2 cases of tuberculosis cared for there. Otherwise, there are no provisions made by the city or by the board of health for the care of persons ill with diseases dangerous to the public health.

**MEDFORD.** Population, 23,150.

Oct. 27, 1911. Dec. 9, 1911.

The city of Medford has no hospital for the care of persons ill with scarlet fever and diphtheria, but frequently send such patients to the Somerville Hospital for treatment.

A tuberculosis clinic was maintained for about three years. The board of health furnished a room for the examination of patients, which was conducted by 3 of the physicians in the city. About five months ago, because of failure of patients to take advantage of the arrangements, the clinic was discontinued. At the present time the city is divided into three districts, and patients ill with tuberculosis are treated at home by physicians under the direction of the anti-tuberculosis committee who have an office at 14 Salem Street. The committee also employs a visiting nurse who visits the patients at their homes. While the work is not under the direction of the board of health, one of the attending physicians is a member of the board of health and the tuberculosis committee are in constant touch with said board.

**NORTH ADAMS.** Population, 22,019.

Oct. 17, 1911. Jan. 12, 1912.

The city of North Adams has a general hospital under private management, but needs in addition a hospital for contagious diseases. As to whether the city should establish and maintain a hospital in common with neighboring towns, local sentiment is divided. Many persons oppose such an arrangement because of apprehended difficulties as to location, apportionment of expense and management. Other persons, on the other hand, recognize the advantage of sharing expenses. Some persons favor building under the present hospital management.

**NORTHAMPTON.** Population, 19,431.

Oct. 7, 1911. Jan. 12, 1912. Feb. 3, 1912.

The Northampton Hospital for Contagious Diseases is built upon the grounds of the Cooley-Dickinson Hospital, under the direction of the Northampton board of health, with the arrangement by the terms of the will of the founder that the sick poor of the towns of Hatfield and Whately are to receive a certain amount of free treatment. In such cases the hospital makes all the arrangements. There are accommodations for 48 patients in this hospital. The anti-tuberculosis society has plans for a good hospital which they hoped to erect in conjunction with the city at the Dickinson Hospital, under arrangements similar to those now in effect with the isolation hospital, but it appears that the hospital authorities declined to repeat the arrangement. The society, therefore, are arranging for another location and change of plans for construction.

## BEVERLY. Population, 18,650.

Oct. 31, 1911.

The city of Beverly has a shack which has been used for the care of smallpox patients. No hospital is established or maintained for the care of persons stricken with tuberculosis, diphtheria, scarlet fever or other communicable diseases.

## MELROSE. Population, 15,715.

Oct. 27, 1911.

The city of Melrose has a hospital of wooden construction which was erected about ten years ago and accommodates normally 5 cases under the control of the board of health, but it is not frequently used unless 3 or more cases need hospital treatment at the same time. When this hospital is not maintained, cases of scarlet fever and diphtheria are transferred to the Malden hospital for treatment. Cases of smallpox have been cared for in an adjoining building. For the treatment of tuberculosis a tuberculosis league was organized about three years ago which furnishes medical attendance to such cases at their homes, and a physician is authorized by the board of health to attend such cases and to give them financial and material aid when necessary.

## WOBURN. Population, 15,308.

Nov. 28, 1911. Jan. 31, 1912.

The city of Woburn sends patients ill with contagious diseases to Malden. The city has a building erected for smallpox that never has been used.

## NEWBURYPORT. Population, 14,949.

Nov. 21, 1911. Dec. 22, 1911. Dec. 29, 1911. Jan. 18, 1912.

Facilities are provided by an anti-tuberculosis society for the examination and treatment of persons ill with tuberculosis. In addition, shacks have been erected and tents provided at the homes where patients live. It is believed that through private bequest the anti-tuberculosis league will soon be in possession of a sum of money sufficient to establish and maintain a hospital of 12 beds for persons ill with tuberculosis. The municipal authorities and the board of health wish to avail themselves of this hospital when built.

## MARLBOROUGH. Population, 14,579.

Dec. 6, 1911. Feb. 7, 1912.

The board of health of the city of Marlborough report that persons ill with tuberculosis, as a rule, are cared for at home, while some go to the State sanatoria.

The statements made above, relating to the care of persons ill with communicable diseases in the cities of the Commonwealth, show that

there are various methods in use depending somewhat upon the population, the number of inhabitants, whether American or foreign, the locality, its character, whether farming, industrial or residential, and the general sanitary conditions prevalent, notably the housing conditions. Obviously, while in some localities a large proportion of patients ill with diseases dangerous to the public health may be properly cared for at their homes, in others — owing to congested districts and bad housing conditions — such methods would be impracticable and indeed useless in order to prevent the spread of infection.

#### THE NEED OF ISOLATION HOSPITALS.

In the larger centers of population, such as cities where there are industrial centers, and where a certain portion of the population live under conditions of congestion in tenement districts, a hospital where persons ill with communicable diseases may be isolated is an urgent need. Proper isolation of the sick cannot be maintained in many homes in the congested districts, and every case of a communicable disease in these homes is a source of infection which may give rise to new cases, either by direct contact between the sick and the well, or by some infected person, *e.g.*, healthy carriers, or things acting as intermediaries. When needy patients ill with a communicable disease are cared for at home where living conditions are unfavorable, it usually happens that some other members of the family contract the disease. The removal of such patients to a hospital, therefore, and the proper isolation of the patients, would not only diminish the number of cases of communicable diseases, but would also result in an economic saving to the community, since, by the removal of the sick ones from the homes, the wage earners gain their freedom to pursue their occupations and the school children are allowed to continue attending school. The loss of school attendance by healthy children in consequence of the occurrence of a communicable disease is considerable. In one tenement house, for instance, where there were many school children, a case of diphtheria occurred. All the children in the tenement were excluded from school, and in consequence thereof the total loss of schooling amounted to fifty-two weeks.

In certain manufacturing communities the death-rate from tuberculosis is larger than that which occurs in a community with approximately the same number of inhabitants where the people are more of the residential type. The former place, in other words, is one which should be equipped with a hospital for the care of persons ill with communicable diseases, whereas the necessity of such a hospital in the latter place is not so apparent. Before requesting cities to establish and constantly

maintain an isolation hospital of their own, it is necessary to make a preliminary survey of all the communities in the State to determine their various needs, in order that the request of the State Board of Health may be reasonable and warrant the expense which will necessarily be involved in the establishment of such hospitals. Among the facts which are ascertained are (*a*) the prevalence of communicable diseases in a given community; (*b*) the number of cases annually reported; (*c*) the frequency of unreported cases (approximately) stated; (*d*) the number of deaths, especially from tuberculosis; (*e*) the proportion of patients which cannot be looked after properly in their own homes, especially patients ill with diphtheria, scarlet fever and tuberculosis; (*f*) the number of patients for whose care the city must pay; (*g*) the number of patients who would be likely to go to a hospital if one were accessible; (*h*) whether there are any existing establishments, private or public, either within that community or in neighboring communities, where patients ill with a communicable disease can be cared for; (*i*) the difficulties experienced in getting patients ill with tuberculosis to go to a State hospital; and (*j*) the number of patients ill with tuberculosis which the community has to pay for in the State sanatoria. The financial condition of the community and other needs, for example, as to water supply and sewerage systems, must be taken into consideration in order that no hardship may result.

#### **ARRANGEMENTS BETWEEN CITIES OR BETWEEN CITIES AND TOWNS FOR THE CARE OF PERSONS ILL WITH COMMUNICABLE DISEASES.**

An isolation hospital established in a city might well serve as a center for surrounding towns, to which they might send such patients as need hospital care, or as cannot be properly isolated in their homes. Although cities, as a rule, do not wish to enter into agreements with neighboring towns for the establishment and maintenance in common of an isolation hospital, yet they are generally willing to accept patients from other towns or cities at a stipulated fee. An example of an exceedingly practical arrangement between a city and surrounding cities and towns is that of the city of Somerville. This city maintains, through its board of health, an institution for the care of scarlet fever and diphtheria patients. This building also has a ward for the care of persons ill with tuberculosis. The scarlet fever ward has a normal capacity of 35 patients, the diphtheria ward 25 patients, and the tuberculosis ward 24 patients. The capacity of all wards may be increased temporarily if occasion demands. The institution is practically self-supporting from a financial point of view; it receives a small annual appro-

priation from the city for maintenance, in addition to the funds collected from patients having settlements in other cities and towns and from the State, together with the income from private patients. When the hospital was opened, communications were sent to the adjoining cities and towns, not necessarily contiguous but within a radius of 8 or 10 miles, informing them that patients ill with communicable diseases in the said cities and towns requiring hospital treatment could be cared for upon the payment of \$15 per week if the disease was scarlet fever, and of \$10 per week if the disease was tuberculosis. Since the opening of the hospital, patients have been received from Arlington, Cambridge, Everett, Malden, Medford, Norwood, Winchester and Woburn, and it appears that all of the several communities have been well satisfied with the existing arrangements and the care of the patients.

As to the establishment and maintenance of hospitals in common, no such arrangement has yet been entered into. One city has suggested that in order for such an arrangement to be made the city would expect the towns to pay a proportionate amount of the cost of establishing and maintaining the hospital, which would be expressed by the ratios of population between each town and the city.

A few cities, through their local representatives, have expressed an unwillingness to permit outside towns to send patients ill with tuberculosis to their hospitals under any conditions, including "the establishment and maintenance of a hospital in common."

#### AS TO THE NEED OF HOSPITAL PROVISIONS FOR TOWNS.

In the smaller communities the need of an isolation hospital is often not apparent. Cases of communicable diseases in some localities are few in number, and when they do occur they can, as a rule, be satisfactorily isolated in their homes. The establishment of isolation hospitals in some communities would be unwarranted, inasmuch as the hospitals would have to be closed for the greater part of the time for lack of patients.

Many of the larger towns, on the other hand, especially the manufacturing centers, would greatly profit by having reasonable access to an isolation hospital, although the need for such a hospital may not warrant the establishment of one by each town.

The reasonable access to a well-maintained isolation hospital would prove in many small communities, as in our cities, an educational factor resulting in the recognition, not only by the poor but by some of the well-to-do patients, of the fact that communicable diseases can be better treated in isolation hospitals than in their own homes. The establishment of hospitals, however, offers certain difficulties.

## DIFFICULTIES OF ESTABLISHING AND MAINTAINING ISOLATION HOSPITALS BY TOWNS.

The larger towns could advantageously use a good isolation hospital at times, but the expense of establishment and maintenance might be too great a burden, unless it was borne as the result of the combined action of several towns. Even then there are difficulties involved which might prevent the successful maintenance of such a hospital. In many instances the establishment and maintenance of a hospital would result in placing a heavy burden on towns even if several towns co-operated.

The prevailing sentiment throughout the towns was that the tax-rate was high, and that the tax-payers would protest against additional burdens. Two towns, for example, are to expend large sums of money for sewerage systems, the townspeople claiming that a sewerage system is of greater importance and more urgently needed than an isolation hospital.

The adjustment of expense between various towns for the establishment and constant maintenance of an isolation hospital would, it was thought, be a matter of difficulty and cause friction. It was suggested that the cost of establishment should be in proportion to the respective populations, while the cost of maintenance should be in proportion to the number of persons sent to the hospital. It was asserted that some towns would not send patients to a hospital if one were established, in order not to incur any expense; then it might be properly questioned whether such towns were constantly maintaining a hospital within the meaning of the law.

On the other hand, it was asserted that it would be manifestly unfair to make a town whose sanitary conditions were good and whose residents, when taken ill with a contagious disease, could be cared for in their homes, contribute to the maintenance of a hospital which that town does not use. The town of Sharon is a case in point. This town is entirely residential and is inhabited by people who are well-to-do, or in moderate circumstances. It was stated that Sharon would have no occasion to send a patient to an isolation or tuberculosis hospital.

The decision as to location in case a hospital were established by several towns in common would be a difficult matter. A town located centrally might object to the reception of persons ill with contagious disease, particularly tuberculosis, from neighboring towns. Moreover, such hospital, if established, would not be able to afford a resident physician, and patients would have to be treated by their family physicians. If the hospital were too far away it would not be convenient for physicians

to attend their patients; consequently, if the expense of paying a physician to travel a great distance fell upon the town it might be too great for the town. The adjustment of expense and the annual change of town officials, it was asserted, would be a cause of friction between towns, necessarily resulting in poor administration of the hospital.

Many of the smaller towns would not use a hospital if one were established. Cases of communicable disease are few in number and can be looked after very well in their homes without endangering the public health. Persons ill with tuberculosis who would be willing to go to a local hospital are too few in number.

Some of the difficulties, it was thought, might be overcome if hospitals were established and maintained by counties from the county tax, in the same manner as in case of court houses, jails and school superintendents. A county, it was thought, might be divided into districts with a given population, say about 30,000 to 50,000, as a unit and a hospital centrally located for each district.

Following is a brief report submitted by State Inspectors of Health as to the existing provisions, methods or needs relating to the care of persons ill with communicable diseases in all the towns of the Commonwealth having a population of 10,000 or over.

#### BROOKLINE. Population, 27,792.

Dec. 11, 1911. Jan. 2, 1912.

The town of Brookline has an isolation hospital. It is the opinion of those in charge of the hospital work that accommodations for persons who are ill with tuberculosis and need hospital care are adequate for present needs, and that what is most important in order to prevent the spread of infectious diseases in Brookline is the establishment of proper supervision of the patients who remain at home and the removal to the hospital of any patients who become a source of infection to others.

#### REVERE. Population, 18,219.

October, 1911.

This town has no isolation hospital. Arrangements are made, however, with the city of Lynn to send all persons ill with diseases dangerous to the public health, needing hospital treatment, to that city. This arrangement includes the care of needy patients ill with tuberculosis.

#### LEOMINSTER. Population, 17,580.

Dec. 30, 1911. Jan. 27, 1912.

Local sentiment is opposed to the establishment of an isolation hospital. Some persons are well satisfied with the provisions for the care of tuber-

culosis patients at the Rutland State Sanatorium, while others favor making some arrangement with Fitchburg regarding the care of patients ill with any communicable diseases.

ATTLEBOROUGH. Population, 16,215.

Oct. 6, 1911. Dec. 1, 1911. Dec. 29, 1911.

This town has been bequeathed money, land and buildings for a general hospital. The will is in litigation. If the will stands, the town wishes to build a general hospital, and have a wing or ward for the care of patients ill with tuberculosis and a ward for patients ill with communicable diseases other than tuberculosis. Local sentiment is, at the present time, against the establishment of an isolation hospital.

WESTFIELD. Population, 16,044.

Oct. 21, 1911. Jan. 19, 1912. Feb. 3, 1912.

The town is converting a so-called smallpox hospital into a tuberculosis hospital, to be used exclusively for patients ill with tuberculosis. There is a contagious ward at the local private hospital which is in part supported by the town. It is desired to continue this arrangement. It was said that the initial expense of establishing a hospital, together with the continued annual cost of its maintenance, would be very large, considering the fact that it would probably be seldom used. The isolation hospital that has been established for years has not been occupied since its erection. Nearby towns all have disused buildings or structures that can be used as a hospital in case of necessity. They are all taxed heavily and do not have money enough to take care of the normal or usual functions of the town, especially in the way of schools and highways.

Patients ill with diphtheria and scarlet fever are cared for at the Keep Memorial (a part of the Noble Hospital), a general hospital. Twenty patients can thus be accommodated. Near-by towns, as Chester, Huntington, Russell, Southwick and Worthington have sent patients to this hospital. This plan has worked out well in the past and some of the citizens see no reason why it should not do so in the future and be better for the town than building a new isolation hospital. It is asserted that the need of a new hospital building is not constant, and that nursing facilities are more satisfactory than they could be for the same amount of money at a municipally owned and operated hospital. The town almshouse has a capacity for 40 patients.

An opinion given by the town solicitor relative to the enforcement of the isolation hospital law of 1911, namely, chapter 613, is of interest: "In case contagious diseases break out in the town the local board of health has plenary power under chapter 75, section 42, of the Revised Laws, to provide such a hospital for the time being. This power has always met the necessities of the town, and there is no reason to believe that it will not do so for

a long time to come. A good share of such contagious diseases as we have had have insisted upon being treated in their own houses. To establish and constantly maintain a building for such a purpose in this town is inadvisable for the following reasons:—

“The initial expense of establishing it and the continual annual cost of maintaining it will be large.

“Such a building must necessarily be built in an isolated locality, and will be the prey and sport of vandals, tramps and other evil doers. Our experience with isolated school houses, and the damage done to them, bears us out in this opinion.

“It would probably never be used: or if an epidemic ever comes, would be so inadequate that it would be of small service, and we will still have to supplement it by an exercise of the power given by Revised Laws, chapter 75, section 42. We have had for years an isolation hospital of precisely the character called for by the act, and during these years not a single case of contagious disease has arisen for which the hospital could be used. It has been absolutely unoccupied since its erection, and we have lately turned it into a hospital for tuberculosis cases. It would seem that this experience of ours with such an isolation hospital is enough to prove that one is not needed and should not be established in this town.

“The act is loosely drawn and can be evaded by adding smallpox or other contagious diseases to our present tuberculosis hospital;—a combination which is not to be desired. It does not seem feasible to me to ask adjoining towns to join with Westfield in establishing or maintaining such a hospital. The towns surrounding Westfield have plainly not the money to do it. They are all taxed to the limit and do not have money enough to take care of the normal or usual functions of the town, especially in the way of schools and highways. If they should have any cases they will probably act under the emergency power in chapter 75 of the Revised Laws which I have cited, for, unfortunately, they all have disused structures or buildings they can employ for this purpose. Besides, they have not, even in combination with Westfield, contagious cases enough to call for such a hospital. So far therefore, as Westfield is concerned neither of these acts is necessary. The institutions they call for are wholly unneeded; both will entail a large expense upon the town, and in my opinion the acts should be repealed, or else so modified as not to include towns as large as or smaller than Westfield.”

#### PEABODY. Population, 15,721.

Oct. 31, 1911. Jan. 3, 1912.

The town of Peabody has a building which has been used for the care of smallpox patients. The board of health and the board of selectmen held a conference recently regarding the establishment of an isolation hospital, with the result that the board of health is to show the need of such a hospital and to give an approximate estimate for its establishment to the finance committee in February.

**GARDNER.** Population, 14,699.

Nov. 21, 1911. Jan. 27, 1912.

A small, inadequate isolation hospital exists within the limits of the town. A committee has been appointed to look into the matter of constructing a new hospital which would care for persons ill with tuberculosis. It is said that a citizen stands ready to donate a suitable site for the construction of an isolation hospital including a tuberculosis hospital. The board of health recognize the need of such an establishment, but the necessary appropriation has not been forthcoming.

**CLINTON.** Population, 13,075.

Dec. 31, 1911. Jan. 27, 1912.

The town of Clinton has a small isolation hospital to which cases of communicable diseases are sent when it is deemed advisable. The question of establishing a new hospital has been considered by the board of health.

**MILFORD.** Population, 13,055.

Dec. 6, 1911.

The town of Milford has a well-equipped modern hospital with no provisions for persons ill with diseases dangerous to the public health.

**ADAMS.** Population, 13,026.

Jan. 12, 1912.

The town of Adams has no hospital for contagious diseases. Local sentiment is divided as to whether the town should combine with North Adams in caring for patients ill with communicable diseases or whether it should establish a hospital of its own.

**FRAMINGHAM.** Population, 12,948.

Dec. 6, 1911.

The town of Framingham has located in South Framingham a well-equipped modern hospital with no provision for diseases dangerous to the public health.

**WEYMOUTH.** Population, 12,895.

Nov. 27, 1911. Dec. 16, 1911.

The board of health is agitating the necessity for establishing a general hospital. If such a hospital were established an isolation hospital might be run in conjunction with it. It is expected that a committee appointed to consider the hospital needs of the community will ask the town at its next meeting for a piece of land belonging to the town, and that the board of health will insert an article in the warrant of the annual town meeting

asking for a sufficient sum of money for the erection of a hospital. It is thought that a general hospital with small isolation wards might meet the present requirements for the town.

**WATERTOWN.** Population, 12,875.

Oct. 27, 1911.

This town has no hospital for contagious diseases and when cases of scarlet fever and diphtheria need hospital treatment they are transferred to the Massachusetts Homœopathic Hospital, Boston, or to the Waltham hospital. The town physician is employed by the board of health to care for needy patients ill with tuberculosis at their homes, and to examine other persons as occasion requires.

**SOUTHBRIDGE.** Population, 12,592.

Nov. 23, 1911. Jan. 31, 1912.

The town of Southbridge has no isolation hospital. It is customary to send hospital patients with communicable diseases to the Worcester hospital.

**PLYMOUTH.** Population, 12,141.

Nov. 27, 1911. Dec. 20, 1911.

The town of Plymouth does not maintain an isolation hospital. It appears that the physicians are ready and willing to have such a hospital erected near the Jordan Hospital, and that the trustees of this hospital have an endowment fund large enough, or nearly so, to support both institutions.

**WEBSTER.** Population, 11,509.

Feb. 2, 1912.

Local sentiment is opposed to the establishment of an isolation hospital. Some patients ill with tuberculosis are cared for at the State Sanatorium while others are cared for and attended at home.

**METHUEN.** Population, 11,448.

Dec. 29, 1911.

The town of Methuen has no isolation or tuberculosis hospital established.

**WAKEFIELD.** Population, 11,404.

Oct. 27, 1911.

The town of Wakefield has no hospital provisions for the care of persons ill with scarlet fever and diphtheria, but has made an arrangement with the board of health of Malden by which such patients are transferred to the Malden hospital for treatment. It is the practice of the local board to employ a physician to care for persons ill with tuberculosis in the town when they need such treatment.

**ARLINGTON.** Population, 11,187.

Oct. 27, 1911. Dec. 22, 1911.

The town of Arlington has no hospital accommodations for scarlet fever and diphtheria patients, but transfers such patients, when they need hospital treatment, to the Somerville Contagious Hospital. No provision has been made for the care of needy patients ill with tuberculosis, but the attention of the local board of health has been brought to this matter, and it is expected that they will take the necessary action.

The town has recently communicated with the city of Somerville in relation to sending needy patients ill with tuberculosis to the Somerville Tuberculosis Hospital, and the permission of the Somerville board of health has been granted to the Arlington board of health.

**GREENFIELD.** Population, 10,427.

Jan. 12, 1912.

The town of Greenfield has not established an isolation hospital or tuberculosis hospital. There is, however, in the town a private general hospital to which a ward might be added.

**WINTHROP.** Population, 10,132.

October, 1911.

The town of Winthrop has neither a tuberculosis nor a contagious hospital. Persons ill with diseases dangerous to the public health needing hospital treatment are sent to the Massachusetts Homœopathic Hospital, Boston, or to the hospital established by the city of Lynn.

Following are selected reports submitted by State Inspectors of Health as to the existing provisions, methods or needs relating to the care of persons ill with communicable diseases in the towns of the Commonwealth having a population of less than 10,000 inhabitants.

**WARE.** Population, 8,774.

Oct. 21, 1911. Dec. 6, 1911.

The town of Ware has no isolation or tuberculosis hospital for the care of persons ill with communicable diseases. Local sentiment at the present time appears to be opposed to the establishment of such a hospital on the ground that it could not be maintained in a satisfactory manner, chiefly owing to the lack of available funds. It is also the opinion that such a hospital is not needed.

## BRAINTREE. Population, 8,066.

Oct. 6, 1911. December, 1911.

The town is largely residential, and persons ill with communicable diseases are cared for in their homes. Adjoining the town farm is a building which, with little expense, could be adapted for an isolation hospital, including persons ill with tuberculosis.

## NORWOOD. Population, 8,014.

Oct. 6, 1911. Dec. 29, 1911.

The town of Norwood does not maintain an isolation hospital within the meaning of the provisions of chapter 613 of the Acts of 1911. The board of health concedes the need of neither an isolation nor a tuberculosis hospital. The following expressions of opinion on the part of representative citizens are of interest:—

(a) "In one part of the town known as the 'flats' there is a large foreign population comprising as many as 30 different nationalities. There are said to be about 1,000 or over in this foreign colony. Unsanitary conditions and overcrowding are said to prevail. Such a hospital is particularly needed for persons ill with tuberculosis. There are many unreported and uncared for cases." — (Member of School Committee.)

(b) "Do not believe that a hospital is needed since we are so near Boston. We occasionally send persons ill with contagious diseases to the Massachusetts Homeopathic Hospital, Boston, as, for example, recently a case of laryngeal diphtheria." — (Member of the Board of Health.)

(c) "An isolation hospital is much needed. Many of the cases in the foreign quarter cannot be properly isolated. In one family of 5, living in 2 rooms, there have been recently 3 cases of diphtheria. The father had to be quarantined and to discontinue his work for which the town had to pay. . . . Recently about 40 cases of diphtheria occurred due to poor isolation." — (A Practicing Physician.)

(d) "Last year 13 cases of tuberculosis were reported; since January of this year 10 cases. There were 5 deaths from tuberculosis since January. The board of health spends about \$900 annually on contagious diseases, paying hospitals in other towns. Eventually a hospital will have to come, but there is no urgent need for it now." — (Secretary of the Board of Health.)

(e) "While there is no community feeling in favor of a hospital I think it might be feasible for Norwood to act conjointly with neighboring towns in establishing one. Such a hospital is necessary." — (Secretary, Civic Association.)

(f) The chairman of the hospital committee of the Board of Trade has been advocating the erection of a general hospital. He has a location chosen

and plans made for an isolation and a tuberculosis hospital. It is hoped that neighboring towns will act conjointly with Norwood. He hopes for the support of all the local physicians.

MILTON. Population, 7,924.

Oct. 6, 1911. December 1911.

The town of Milton does not maintain an isolation hospital within the meaning of the provisions of chapter 613 of the Acts of 1911. The town is almost entirely residential and covers a large area. There are a few foreigners and no congested districts. The following are expressions of opinion on the part of representative citizens:—

(a) "There is no special prevalence of contagious diseases in the town. Most of the cases can be cared for at their homes. Occasionally patients are sent away to the Massachusetts Homœopathic Hospital in Boston. There is a small house of 3 rooms situated on the town farm which can be used as an isolation hospital in case of emergency. The town is not paying for any cases of tuberculosis at a State sanatorium."—(Agent of the Board of Health.)

(b) "There is very rarely need of sending patients ill with contagious diseases to an isolation hospital. It may be practical to enlarge the small pest house on the town farm and to provide a tuberculosis hospital on the grounds."—(A Physician.)

(c) "Several years ago the subject of a contagious hospital was gone into very carefully, but it was decided that there was no need for such a hospital, and arrangements were accordingly made with the Massachusetts Homœopathic Hospital to care for any patients that the board of health might see fit to send. There is a convalescent home in the town established by private funds. One part of this home is used as a general hospital. There is room for 9 patients but it is never full. Only 3 or 4 of the beds are occupied."—(A Member of a Committee on Tuberculosis of the Massachusetts Medical Society.)

STOUGHTON. Population, 6,316.

Oct. 6, 1911. December 1911.

The town of Stoughton does not maintain an isolation hospital within the meaning of chapter 613 of the Acts of 1911.

"The town has now as heavy a burden as it can carry. The tax rate is \$25.60, the highest they ever had. The State Board of Health has ordered the town to install a sewerage system to avoid pollution of the Neponset River, and this will cost about \$100,000. The town is hardly in a position to act conjointly with other towns."—(Chairman of Selectmen.)

"A hospital is a very good thing and will ultimately have to come, but I do not believe the town could undertake to build one now. If the town

were to have a hospital we should prefer to have one independently of other towns." — (Secretary of the Board of Health.)

"For tubercular cases the need is an urgent one. It would be practical to combine with other towns." — (Chairman of the Board of Health.)

#### HINGHAM. Population, 4,965.

Nov. 27, 1911. Dec. 20, 1911.

"The town of Hingham has never maintained an isolation hospital. It is entirely residential and there are no congested districts." — (Chairman and One Other Member of Selectmen and Board of Health.)

"To make some hospital provisions for the isolation of communicable diseases would be taking a very desirable step, since a considerable number of persons ill with such diseases cannot be properly isolated and treated at home." — (School Physician and District Nurse.)

#### WALPOLE. Population, 4,892.

Oct. 6, 1911. Dec. 29, 1911.

"The town of Walpole does not maintain an isolation hospital within the meaning of chapter 613 of the Acts of 1911. A hospital is badly needed. There are no provisions for the isolation of persons ill with communicable diseases. There are many foreigners in town living under such conditions that make the proper isolation of contagious cases impossible." — (A Practicing Physician.)

"Such a hospital is needed and will have to come eventually. The town rarely sends patients away. During the last four years only 3 or 4 patients were sent out of town to an isolation hospital." — (Member of Board of Health.)

"Such a hospital is desirable if it can be established conjointly with other towns." — (A Citizen and Public Official.)

"The board of health spend annually about \$500. To establish a hospital would be to impose too heavy a tax upon the community. There is no special need for such a hospital." — (Secretary of the Board of Health.)

#### CANTON. Population, 4,797.

Oct. 6, 1911. Dec. 29, 1911.

The town of Canton is well situated and without any congested districts, although there is quite a foreign population employed in some of the industrial establishments. The town has an active board of health, a district nursing association and a school nurse. Recently a civic improvement association was organized.

"Canton, Stoughton and Sharon are the natural towns to combine for the establishment of a hospital. There has been some discussion as to the need of a hospital for industrial accidents and surgical cases. The contagious hospital ought to form a part of a general hospital. A place where

accidents could be treated would appeal to the manufacturers. There appears to be no objection to having a tuberculosis hospital connected with a general hospital. If the question were agitated and public interest aroused private contribution would in all likelihood be forthcoming to help in its establishment." — (A Physician.)

"There is need of such a hospital. The only way to treat advanced cases of tuberculosis is in a local hospital. You have to wait too long for a patient to be admitted to a State sanatorium, and patients often refuse to go far away from home." — (Chairman of the Board of Health and Chairman of Health Committee of Canton Improvement Association.)

"There are not enough patients ill with communicable diseases to warrant the establishment of an isolation hospital. What Canton needs is a hospital for medical and surgical cases. Such a hospital could be started in an inexpensive way on the cottage system. In connection with the hospital, provisions could be made for cottages for contagious cases. The hospital need not be an expensive one, and there would be no difficulty in raising money." — (Member of Overseers of Poor.)

#### RANDOLPH. Population, 4,301.

Oct. 6, 1911. Dec. 1, 1911.

There are several shoe factories in town, and many inhabitants are employed in Brockton factories. There is a small foreign population, but there are no congested districts.

"There seems to be no need of an isolation hospital. Cases of contagious diseases are few in number and, as a rule, can be well cared for at home; during the year there were 2 cases of tuberculosis reported, 7 of scarlet fever and 2 of diphtheria. The town could not go to the expense of establishing and maintaining an isolation hospital. It might, however, if necessary, enter into some agreement with Brockton, only 6 miles away. The appropriation for health work in the town for this year is \$125." — (Chairman of Selectmen and Board of Health.)

"The town is not thickly settled and cases of contagious diseases, of which there are very few, can be well looked after at home. There are very few cases of tuberculosis. An agreement with Brockton may be a practical thing." — (Physician, Member of Committee on Tuberculosis of Massachusetts Medical Society.)

#### LEE. Population, 4,106.

Jan. 12, 1912.

A manufacturing town with a number of foreigners; some summer visitors. No hospital facilities of any kind. While the desirability of a hospital for contagious diseases is recognized, the sentiment is rather that such is not called for at this time. Some favor combination with Pittsfield. Private information is given that there may soon be donated to the town some

hospital facilities. Lee is the logical center for Stockbridge, Lenox, Tyringham and Otis, but local sentiment is such that it is thought that the practical working out of such a combination would be impracticable. — (Information obtained from two Physicians, a Manufacturer, a Banker and Others.)

**BARRE.** Population, 2,957.

Jan. 27, 1912.

The board of health believe that the town cannot afford to establish a hospital for contagious diseases. They deem it impractical to combine with adjoining towns owing to the distance, none being nearer than 7 miles. Housing conditions are fairly good, with the exception of conditions in a few tenement houses at South Barre. — (Town Clerk.)

**OXFORD.** Population, 3,361.

January, 1912.

This town should continue as in the past to send their patients with infectious and contagious diseases to Worcester. — (Information obtained from Selectmen, Board of Health, Clergy and Laymen.)

**SHARON.** Population, 2,310.

Oct. 6, 1911. Dec. 26, 1911.

Sharon is entirely a residential town and is a health resort. There are no industrial establishments. There are no tenements or congested conditions anywhere. The people are well-to-do. There appears to be no need of a hospital, and the patients with advanced tuberculosis are well cared for in private homes. — (Opinion of several Physicians, including a Member of the Board of Health.)

**DIGHTON.** Population, 2,235.

January, 1912.

"There appears to be no need of an isolation hospital in the town. We should be allowed to send patients ill with communicable diseases to Taunton if necessary." — (Chairman of Selectmen and Board of Health, a Member of the Legislature.)

**STOCKBRIDGE.** Population, 1,933.

January, 1912.

A residential town with many large summer estates. There is an excellent almshouse where some patients might be cared for. Some persons feel that the town might unite with Lee or adjoining towns. — (Information from several Physicians.)

## HANSON. Population, 1,854.

Nov. 27, 1911. December, 1911.

"There is a fairly large Portuguese population in town living under unfavorable conditions. Consequently patients ill with infectious diseases are unsatisfactorily isolated in these homes. An isolation hospital within easy reach of the patients would be desirable." — (A Practicing Physician.)

"An isolation hospital is not needed and would be a burden to the town. An order to erect such a hospital would be unreasonable." — (Member of Selectmen and Member of the Legislature.)

## BUCKLAND. Population, 1,573.

Jan. 12, 1912.

"A farming community with isolated houses except in a small area which is included in the Shelburne Falls fire district. It appears to be the consensus of opinion that except for this section no hospital is needed.

## FREETOWN. Population, 1,471.

Nov. 28, 1911. Jan. 14, 1912.

"The board of selectmen of this town and our responsible citizens generally unite to deprecate the enforcement of the statute relating to isolation hospitals in its present form, believing that it is unreasonable in its application to this town. We hope that the Legislature now in session will so amend the law that such communities as ours shall be furnished with accommodations for their comparatively few cases, either in some institution to be built by the county at large or in the hospitals of nearby cities." — (Secretary of the Board of Health.)

## LUNENBURG. Population, 1,393.

Jan. 27, 1912.

A largely residential and farming town. The homes of the people, who are chiefly American, are of the cottage type and scattered except in the village. To be obliged to establish and maintain an isolation hospital the selectmen consider that it would be a very great burden upon the town, in the light of the fact that there would probably be no demand or use for it. The town possibly might make some arrangement with the city of Fitchburg for the care of persons ill with communicable diseases.

"The health of the town is unusually good, and the few cases of communicable diseases occurring from time to time would not justify the expenditure of the necessary amount of money to establish a hospital." — (A Citizen.)

## PEMBROKE. Population, 1,336.

Nov. 27, 1911.. December, 1911.

"The town would consider such a hospital unnecessary and burdensome. Persons ill with contagious diseases can be looked after very well at their homes. Few cases of tuberculosis have been seen during the last three years." — (A Physician.)

"An unreasonable request and an unnecessary burden to the town. Very few persons ill with communicable diseases would be likely to go to such a hospital if established." — (Member of Selectmen and Board of Health.)

## WEST STOCKBRIDGE. Population, 1,271.

Jan. 12, 1912.

Largely an agricultural community with some summer visitors. No hospital necessary.

## WEST BOYLSTON. Population, 1,270.

Jan. 12, 1912.

Village is about 7 miles from Worcester. A residential and farming community. Persons ill with contagious diseases have been cared for at the Worcester Isolation Hospital when it has been deemed advisable. The board of health would prefer to continue this arrangement, as it appears to them that no better could be secured.

## HINSDALE. Population, 1,116.

Jan. 12, 1912.

Largely residential community with some summer visitors. No hospital needed locally. If necessary it would seem that some arrangement might be made with Pittsfield for the care of communicable diseases. — (Member of Board of Health and Member of School Committee.)

## PRINCETON. Population, 818.

Jan. 25, 1912.

A farming community, residential village, where summer visitors come. It is very rarely that an isolation hospital would be needed according to the board of selectmen. It is believed that the town would bitterly oppose the establishment of such a hospital. When occasion has arisen patients ill with contagious diseases have been cared for at the Worcester Isolation Hospital. The town would prefer to continue this arrangement.

"A few years ago the town voted to prohibit the construction of any hospital or sanatorium within its limits. It would be an injury to the town to have such a hospital. The town would oppose it." — (Town Clerk.)

**DANA.** Population, 736.

Jan. 25, 1912.

The village, situated about 12 miles south of Athol, is reached by a single track railroad running between Springfield and Athol; no electrics. The homes of the people are mostly of the cottage type, a few double houses. Isolation of communicable diseases can be carried out properly in nearly all the homes, whereas it would be difficult for this town to combine with any town because of the long distance between towns. It would be a hardship at this time to construct a hospital.

**BOYLSTON.** Population, 714.

Jan. 25, 1912.

Farming community 6 or 8 miles from Worcester and 4 miles from Clinton. The homes are of the cottage type and farms are scattered. When deemed advisable persons ill with contagious diseases have been cared for at the Worcester Isolation Hospital. This arrangement has been satisfactory to the town authorities. If the town were to construct a hospital for such patients it would be closed nearly all the time. Good isolation prevails in most of the homes.

**RICHMOND.** Population, 650.

Jan. 12, 1912.

A much scattered farming community with some summer visitors. If any combination is called for it will be with Pittsfield, which is its business center.

**NEW SALEM.** Population, 639.

Jan. 12, 1912.

A hill town with widely scattered isolated dwellings. No isolation hospital is needed.

**OAKHAM.** Population, 552.

Jan. 27, 1912.

The village is situated among the hills remote from any line of travel. Homes are of the cottage type and scattered; a farming town. The selectmen think it would be quite a burden to try to maintain an isolation hospital in so small a town. One case of scarlet fever was the only case of communicable disease reported during 1911.

**WENDELL.** Population, 502.

Jan. 12, 1912.

A hill town sparsely settled. No isolation hospital required.

**HANCOCK.** Population, 465.

Jan. 12, 1912.

An inaccessible country town sparsely settled. Natural relations with New York towns. No isolation hospital required.

**ROWE.** Population, 456.

Jan. 12, 1912.

A farming community, hill town. No isolation hospital needed.

**PHILLIPSTON.** Population, 426.

Jan. 27, 1912.

The village is situated among the hills 7 miles from any neighboring town or village. It is reached by a carriage road; farming community; homes scattered. Isolation of persons ill with communicable diseases in their homes is usually good. The board of selectmen and board of health believe that it would be a great hardship upon the town to be obliged to construct a hospital for which they would have neither demand nor use.

"Persons ill with contagious diseases can have ample care in their homes. The town could not afford such a hospital." — (A Prominent Citizen.)

**HAWLEY.** Population, 424.

Jan. 12, 1912.

A farming community, sparsely settled; a hill town. No isolation hospital is needed. Patients needing surgical treatment are cared for at North Adams and Greenfield.

**HEATH.** Population, 346.

Jan. 12, 1912.

A hill town with scattered farming community. Patients needing surgical treatment can go to North Adams. No isolation hospital is needed, and no combination with neighboring towns is practicable or necessary.

**PREScott.** Population, 320.

Jan. 12, 1912.

A sparsely settled, isolated, mountainous town. No demand for an isolation hospital.

**SHUTESBURY.** Population, 267.

Jan. 12, 1912.

An isolated hill town. No isolation hospital needed.

**PERU.** Population, 237.

Jan. 12, 1912.

A remote and inaccessible hill town; scattered farming community; no isolation hospital needed.

MOUNT WASHINGTON. Population, 110.

Jan. 12, 1912.

An isolated and scattered town; few summer visitors; no isolation hospital necessary. In case of emergency Pittsfield is most accessible.

#### GENERAL CONSIDERATIONS.

In order to diminish the spread of communicable diseases there must be proper isolation of persons ill with such diseases. Among persons who are in comfortable circumstances, living in comfortable homes, it may be possible to isolate the patients properly at their homes and to keep them under strict isolation until the danger of other persons contracting the disease by direct or indirect contact is practically eliminated. Inasmuch, however, as almost every community has some poor people living under conditions which make proper isolation in the home impracticable, if not impossible, and inasmuch as many persons are ignorant of the ways in which infectious diseases spread, and consequently fail to appreciate the need of strict isolation and quarantine, it is essential that hospitals or places be provided, or that some suitable provision be made within reasonable access to every community, for the isolation of those persons who cannot be properly cared for in their homes.

The public should recognize, however, that the provision of such hospitals or places is but one step towards the solution of the difficulties arising in the attempt to control the spread of communicable diseases. What is most essential is the careful investigation by the local board of health of each person stricken with a communicable disease. The investigation should be made immediately on the report of the disease by the attending physician, a member of the household or the person having charge of the patient. There should be a reasonably careful supervision of isolation and quarantine during the entire course of the disease. In order to prevent the spread of infection in cases where proper isolation cannot be obtained at home, the local board of health should cause the infected person to be removed to a hospital or place where proper isolation can be obtained, provided the removal can be without danger to the patient's health. Otherwise, the house or place in which the patient remains should be considered as a hospital, and all persons residing there, or in any way connected therewith, should be subject to the regulations of the said local board. Such action is in accordance with existing provisions of law. It is quite possible that if such action were taken by local boards of health in all cases of diseases dangerous to the public health they would begin to see the need more than they do now of a

hospital or suitable place of reception of the sick who cannot be properly isolated in their homes.

Since the investigations were made, the result of which gave rise to the above statements of fact and opinion, the law relating to the maintenance of isolation hospitals by cities and towns, viz., chapter 613 of the Acts of 1911, has been amended as follows:—

ACTS OF 1912, CHAPTER 151.

AN ACT RELATIVE TO THE MAINTENANCE OF HOSPITALS BY CITIES AND TOWNS.

SECTION 1. Section thirty-five of chapter seventy-five of the Revised Laws, as amended by chapter six hundred and thirteen of the acts of the year nineteen hundred and eleven, is hereby further amended by striking out the said section and inserting in place thereof the following:— *Section 35.* Each city shall, and each town may, and upon the request of the state board of health, shall, establish and maintain constantly within its limits one or more hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health as defined by the state board of health, unless there already exists in the city or town a hospital for the reception of persons ill with such diseases, which is satisfactory to the state board of health, or unless some arrangement which is satisfactory to the state board of health is made between neighboring cities or neighboring towns, or neighboring cities and towns, for the care of persons having such diseases. All such hospitals established and maintained by cities or towns shall be subject to the orders and regulations of the boards of health of the cities or towns in which they are respectively situated. Plans for the construction of the said hospitals shall be approved by the state board of health before the hospitals are constructed, and the state inspectors of health shall annually make such examination of said hospitals as in the opinion of the state board of health may be necessary. A city or town which upon the request of the state board of health refuses or neglects to establish and maintain such a hospital shall forfeit not more than five hundred dollars for each refusal or neglect: *provided, however,* that if, in the opinion of the boards of health of two or more adjoining cities or towns or a city and an adjoining town or towns, such hospitals can advantageously be established and maintained in common, the authorities of the said cities or towns may, subject to the approval of the state board of health, enter into such agreements as shall be deemed necessary for the establishment and maintenance of the same.

SECTION 2. This act shall take effect upon its passage. [Approved February 24, 1912.]

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING MARCH 2, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Puerperal (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	272	66	92	38	33	4	2	1	—	1	1
Worcester, .	145,986	49	17	18	9	2	1	4	2	—	1	—
Fall River, .	119,295	41	19	22	16	3	1	1	1	—	1	—
Lowell, .	106,294	41	15	14	7	4	1	—	—	—	—	—
Cambridge, .	104,839	35	3	13	7	1	—	—	—	—	—	—
New Bedford, .	96,652	41	13	10	6	1	—	—	—	—	—	—
Lynn, .	89,336	22	5	6	3	2	1	—	—	—	—	—
Springfield, .	88,926	24	9	8	3	1	—	—	—	—	—	1
Lawrence, .	85,892	30	7	15	8	5	1	—	—	—	—	—
Somerville, .	77,236	27	7	12	7	4	—	1	—	—	—	—
Holyoke, .	57,730	24	10	11	11	—	—	—	—	—	—	—
Brockton, .	56,878	11	3	5	5	—	—	—	—	—	—	—
Malden, .	44,404	14	2	4	3	—	—	—	—	—	—	—
Haverhill, .	44,115	16	3	2	2	—	—	—	—	—	—	—
Salem, .	43,697	13	—	1	1	—	—	—	—	—	—	—
Newton, .	39,806	10	0	4	4	—	—	—	—	—	—	—
Fitchburg, .	37,826	10	—	2	—	2	2	—	—	—	—	—
Taunton, .	34,259	15	3	4	2	—	—	—	—	—	—	—
Everett, .	33,484	5	1	1	1	—	—	—	—	—	—	—
Quincy, .	32,642	8	0	1	—	1	—	—	—	—	—	—
Chelsea, .	32,452	12	2	2	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	8	2	1	1	—	—	—	—	—	—	—
Waltham, .	27,834	7	2	4	4	—	—	—	—	—	—	—
Brookline, .	27,792	10	—	6	4	2	—	—	—	—	—	—
Chicopee, .	25,401	11	3	5	3	—	—	—	—	—	—	—
Gloucester, .	24,398	13	—	4	—	1	—	2	—	—	—	1
Medford, .	23,150	1	—	1	1	—	—	—	—	—	—	—
North Adams, .	22,019	7	0	1	1	—	—	—	—	—	—	—
Northampton, .	19,431	5	0	1	1	—	—	—	—	—	—	—
Beverly, .	18,650	6	1	1	—	—	—	—	—	—	—	—
Revere, .	18,219	5	3	1	1	—	—	—	—	—	—	1
Leominster, .	17,580	7	2	2	2	2	—	—	—	—	—	—
Attleborough, .	16,215	6	4	2	1	—	—	—	—	—	—	—
Westfield, .	16,044	7	1	5	2	3	—	—	—	—	—	—
Peabody, .	15,721	5	3	1	1	—	—	—	—	—	—	—
Melrose, .	15,715	2	—	1	—	1	—	—	—	—	—	—
Woburn, .	15,308	3	0	1	1	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	1	1	—	—	—	—	—	—	—
Gardner, .	14,699	9	3	4	3	—	1	—	—	—	—	—
Marlborough, .	14,579	7	2	3	1	2	—	—	—	—	—	—
Clinton, .	13,075	5	3	1	1	—	—	—	—	—	—	—
Milford, .	13,055	5	0	2	—	—	2	—	—	—	—	—
Adams, .	13,026	2	0	1	—	—	1	—	—	—	—	—
Framingham, .	12,948	2	1	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	0	1	1	—	—	—	—	—	—	—
Southbridge, .	12,592	4	3	1	1	—	—	—	—	—	—	—
Plymouth, .	12,141	2	—	1	—	—	1	—	—	—	—	—
Webster, .	11,509	4	1	1	—	—	—	—	—	—	—	—
Methuen, .	11,448	4	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	1	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	4	—	2	1	—	—	—	—	—	—	—
Greenfield, .	10,427	0	—	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	3	—	1	1	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,593,485	884	222	302	167	75	9	9	4	2	3	3
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WEEK ENDING MARCH 9, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	298	60	114	53	33	5	3	—	2	5	1
Worcester, .	145,986	55	19	15	7	2	3	—	—	1	—	—
Fall River, .	119,295	45	21	28	19	5	—	1	—	—	2	—
Lowell, .	106,294	32	9	11	6	1	—	—	—	—	—	—
Cambridge, .	104,839	36	8	15	6	4	—	—	—	—	—	—
New Bedford, .	96,652	35	16	14	8	3	—	1	1	—	—	—
Lynn, .	89,336	31	6	7	6	1	—	—	2	—	—	—
Springfield, .	88,926	27	9	5	3	—	—	—	—	—	—	—
Lawrence, .	85,892	34	14	11	7	1	—	—	—	—	—	—
Somerville, .	77,236	16	2	6	4	1	—	—	—	—	—	—
Holyoke, .	57,730	11	4	3	2	1	—	—	—	—	—	—
Brockton, .	56,878	16	2	2	1	—	—	—	—	—	—	—
Malden, .	44,404	7	1	1	1	—	—	—	—	—	—	—
Haverhill, .	44,115	12	3	5	5	3	—	—	—	—	—	—
Salem, .	43,697	15	2	5	3	1	—	—	—	—	—	—
Newton, .	39,806	10	3	3	3	—	—	—	—	—	—	—
Fitchburg, .	37,826	6	2	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	15	2	7	4	2	—	—	—	—	—	—
Everett, .	33,484	11	2	4	3	1	—	—	—	—	—	—
Quincy, .	32,642	12	2	1	1	—	—	—	—	—	—	—
Chelsea, .	32,452	7	1	3	1	—	—	2	—	—	—	—
Pittsfield, .	32,121	9	2	3	1	—	—	3	—	—	—	—
Waltham, .	27,834	5	0	1	1	—	—	—	—	—	—	—
Brookline, .	27,792	7	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	4	3	1	1	—	—	—	—	—	—	1
Gloucester, .	24,398	6	2	1	1	—	—	—	—	—	—	—
Medford, .	23,150	6	1	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	3	1	1	1	—	—	—	—	—	—	—
Northampton, .	19,431	11	0	3	1	—	2	1	—	—	—	—
Beverly, .	18,650	3	—	1	1	—	—	—	—	—	—	—
Revere, .	18,219	5	—	1	1	—	1	—	—	—	—	—
Leominster, .	17,580	3	—	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	4	1	1	1	—	—	—	—	—	—	—
Westfield, .	16,044	9	4	4	3	1	—	—	—	—	—	—
Peabody, .	15,721	3	1	3	1	—	1	1	—	—	—	—
Melrose, .	15,715	5	1	1	1	—	—	—	—	—	—	—
Woburn, .	15,308	1	0	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	5	—	1	1	—	—	—	—	—	—	—
Gardner, .	14,699	6	2	1	1	—	—	—	—	—	—	—
Marlborough, .	14,579	9	2	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	1	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	3	2	—	2	—	—	—	—	—	—	—
Adams, .	13,026	1	0	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	2	1	1	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	0	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	3	2	1	—	—	—	1	—	—	—	—
Plymouth, .	12,141	5	2	1	1	—	—	—	—	—	—	1
Webster, .	11,509	7	6	3	2	—	—	1	1	—	—	—
Methuen, .	11,448	2	1	1	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	6	2	1	1	—	—	—	—	—	—	—
Winthrop, .	10,132	2	—	1	1	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	874	228	293	157	70	14	8	-	3	9	3
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WEEK ENDING MARCH 16, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	276	63	87	40	22	—	5	3	—	—	2
Worcester, .	145,986	45	11	16	13	2	—	1	—	—	—	1
Fall River, .	119,295	37	10	19	12	3	—	—	—	—	—	—
Lowell, .	106,294	43	11	15	9	5	—	1	—	—	—	—
Cambridge, .	104,839	33	5	13	5	8	—	—	—	—	—	—
New Bedford, .	96,652	34	17	22	19	3	—	—	—	—	—	—
Lynn, .	89,336	25	8	12	5	4	—	1	1	—	2	—
Springfield, .	88,926	39	9	10	6	1	—	—	—	—	—	—
Lawrence, .	85,892	26	10	12	7	3	—	—	—	—	—	—
Somerville, .	77,236	16	1	6	2	2	—	—	1	—	—	—
Holyoke, .	57,730	23	9	7	2	3	—	1	—	1	—	—
Brockton, .	56,878	21	9	6	1	2	—	—	—	—	—	1
Malden, .	44,404	9	2	3	2	—	—	1	—	—	—	2
Haverhill, .	44,115	15	7	8	6	—	—	—	—	—	—	1
Salem, .	43,697	14	1	2	1	1	—	—	—	—	—	—
Newton, .	39,806	11	2	—	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	11	3	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	16	6	6	4	1	—	—	1	—	—	—
Everett, .	33,484	9	—	2	1	—	—	—	—	—	1	—
Quincy, .	32,642	10	4	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	6	—	—	—	—	—	—	—	—	—	—
Pittsfield, .	32,121	10	1	3	1	—	—	2	—	—	—	—
Waltham, .	27,834	5	1	1	1	—	—	—	—	—	—	—
Brookline, .	27,792	7	1	1	1	—	—	—	—	—	—	—
Chicopee, .	25,401	6	5	3	2	—	—	—	—	—	—	1
Gloucester, .	24,398	12	3	2	1	—	—	—	—	—	—	—
Medford, .	23,150	6	2	3	3	—	—	—	—	—	—	—
North Adams, .	22,019	4	1	1	—	—	1	—	—	—	—	—
Northampton, .	19,431	5	1	1	1	—	—	—	—	—	—	—
Beverly, .	18,650	5	—	2	—	—	1	1	—	—	—	—
Revere, .	18,219	8	1	3	—	—	2	—	—	—	—	—
Leominster, .	17,580	8	2	2	1	—	1	—	—	—	—	—
Attleborough, .	16,215	—	—	2	1	—	1	—	—	—	—	—
Westfield, .	16,044	4	2	2	1	—	1	—	—	—	—	—
Peabody, .	15,721	5	1	1	—	—	—	1	—	—	—	—
Melrose, .	15,715	3	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	2	2	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	5	—	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	4	1	4	3	—	—	—	1	—	—	—
Marlborough, .	14,579	4	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	4	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	13	1	6	6	—	—	—	—	—	—	—
Adams, .	13,026	1	0	1	1	—	—	—	—	—	—	—
Framingham, .	12,948	5	—	1	—	—	—	—	—	—	1	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	5	1	1	—	—	—	—	—	—	—	—
Southbridge, .	12,592	5	3	1	1	—	—	—	—	—	—	—
Plymouth, .	12,141	5	2	3	1	—	1	—	—	—	—	1
Webster, .	11,509	2	2	2	1	—	—	1	—	—	—	1
Methuen, .	11,448	4	1	1	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	—	1	—	—	1	—	—	—	—	—
Arlington, .	11,187	2	—	1	—	—	1	—	—	—	—	—
Greenfield, .	10,427	6	1	1	1	—	—	—	—	—	—	—
Winthrop, .	10,132	4	—	1	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,577,270	880	223	295	161	71	15	10	3	3	4	6
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WEEK ENDING MARCH 23, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	DEATHS FROM —												
		Reported Deaths in Each.	Deaths under Five Years.											
			Principal Infectious Diseases.	Acute Diseases.	Lung Diseases.	Tuberculosis (or not classified).	Tuberculosis other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.		
Boston, .	686,092	241	50	80	42	18	—	—	—	—	—	—	4	3
Worcester, .	145,986	42	8	8	5	2	—	—	—	—	—	—	1	1
Fall, River, .	119,295	33	15	17	10	1	—	—	—	—	—	—	1	1
Lowell, .	106,294	28	9	8	5	1	—	—	—	—	—	—	—	—
Cambridge, .	104,839	33	12	13	6	5	—	—	—	—	—	—	—	—
New Bedford .	96,652	41	18	12	7	3	—	—	—	—	—	—	—	—
Lynn, .	89,336	18	4	5	3	2	—	—	—	—	—	—	—	—
Springfield, .	88,926	39	8	11	5	2	—	—	—	—	—	—	—	—
Lawrence, .	85,892	31	11	14	9	4	—	—	—	—	—	—	—	—
Somerville, .	77,236	24	1	9	5	3	—	—	—	—	—	—	—	—
Holyoke, .	57,730	16	4	1	1	1	—	—	—	—	—	—	—	—
Brockton, .	56,878	23	9	9	5	5	—	—	—	—	—	—	—	—
Malden, .	44,404	10	5	4	1	1	—	—	—	—	—	—	—	—
Haverhill, .	44,115	17	3	4	4	4	—	—	—	—	—	—	—	—
Salem, .	43,697	13	4	5	3	3	—	—	—	—	—	—	—	—
Newton, .	39,806	12	2	3	1	1	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	9	3	—	—	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	18	6	10	8	2	—	—	—	—	—	—	—	—
Everett, .	33,484	10	5	3	2	—	—	—	—	—	—	—	—	—
Quincy, .	32,642	11	2	2	1	1	—	—	—	—	—	—	—	—
Chelsea, .	32,452	3	—	—	—	—	—	—	—	—	—	—	—	—
Pittsfield, .	32,121	16	1	5	3	1	—	—	—	—	—	—	—	—
Waltham, .	27,834	8	1	1	1	1	—	—	—	—	—	—	—	—
Brookline, .	27,792	6	—	1	1	1	—	—	—	—	—	—	—	—
Chicopee, .	25,401	3	2	1	1	1	—	—	—	—	—	—	—	—
Gloucester, .	24,398	9	1	3	2	2	—	—	—	—	—	—	—	—
Medford, .	23,150	5	—	2	2	2	—	—	—	—	—	—	—	—
North Adams, .	22,019	2	—	3	2	2	—	—	—	—	—	—	—	—
Northampton, .	19,431	9	2	—	—	—	—	—	—	—	—	—	—	—
Beverly, .	18,650	4	—	—	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	3	—	1	1	1	—	—	—	—	—	—	—	—
Leominster, .	17,580	2	0	1	1	1	—	—	—	—	—	—	—	—
Attleborough, .	16,215	1	—	—	—	—	—	—	—	—	—	—	1	—
Westfield, .	16,044	8	1	4	1	1	—	3	—	—	—	—	—	—
Peabody, .	15,721	3	—	—	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	7	1	2	1	1	—	—	—	—	—	—	—	—
Woburn, .	15,308	10	0	1	1	1	—	—	1	—	—	—	—	—
Newburyport, .	14,949	4	—	—	2	2	—	—	—	—	—	—	—	—
Gardner, .	14,699	2	1	1	1	1	—	—	1	—	—	—	—	—
Marlborough, .	14,579	3	0	1	1	1	—	—	1	—	—	—	—	—
Clinton, .	13,075	5	1	1	1	1	—	—	—	—	—	—	—	—
Milford, .	13,055	3	1	1	1	1	—	—	—	—	—	—	—	—
Adams, .	13,026	3	0	2	2	2	—	—	2	—	—	—	—	—
Framingham, .	12,948	4	2	1	1	1	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	5	2	3	3	3	—	—	—	—	—	—	—	—
Southbridge, .	12,592	1	—	—	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	4	1	1	1	1	—	—	—	—	—	—	—	—
Webster, .	11,509	5	—	3	2	2	—	—	—	—	—	—	—	—
Methuen, .	11,448	5	2	—	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	4	1	1	1	1	—	—	—	—	—	—	—	—
Arlington, .	11,187	3	1	2	1	1	—	—	—	—	—	—	—	—
Greenfield, .	10,427	1	1	—	—	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	4	—	—	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	824	203	263	150	55	8	4	4	1	8	7
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WEEK ENDING MARCH 30, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	287	88	96	51	23	3	4	—	—	—	—
Worcester, .	145,986	62	15	26	17	2	2	3	—	—	—	—
Fall River, .	119,295	34	10	13	7	4	1	—	—	—	—	—
Lowell, .	106,294	45	14	18	9	6	1	—	—	—	—	—
Cambridge, .	104,839	26	5	9	5	1	1	—	—	—	—	—
New Bedford, .	96,652	33	16	13	7	1	1	—	—	—	—	—
Lynn, .	89,336	29	9	6	3	2	1	—	—	—	—	—
Springfield, .	88,926	35	8	13	8	1	1	—	—	—	—	—
Lawrence, .	85,892	38	12	13	5	7	1	—	—	—	—	—
Somerville, .	77,236	28	3	9	5	3	3	—	—	—	—	—
Holyoke, .	57,730	19	7	5	5	1	1	—	—	—	—	—
Brockton, .	56,878	24	5	8	2	3	3	—	—	—	—	—
Malden, .	44,404	10	1	3	3	2	2	—	—	—	—	—
Haverhill, .	44,115	17	5	5	2	2	2	—	—	—	—	—
Salem, .	43,697	11	3	5	3	1	1	—	—	—	—	—
Newton, .	39,806	14	1	2	2	2	2	—	—	—	—	—
Fitchburg, .	37,826	13	3	3	1	—	—	—	—	—	—	—
Taunton, .	34,259	23	9	7	4	—	—	—	—	—	—	—
Everett, .	33,484	8	4	2	2	—	—	—	—	—	—	—
Quincy, .	32,642	2	1	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	17	5	4	3	1	1	—	—	—	—	—
Pittsfield, .	32,121	9	2	1	1	1	—	—	—	—	—	—
Waltham, .	27,834	7	1	3	2	1	1	—	—	—	—	—
Brookline, .	27,792	5	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	8	5	2	1	—	—	—	—	—	—	—
Gloucester, .	24,398	—	—	—	—	—	—	—	—	—	—	—
Medford, .	23,150	9	3	2	2	—	—	—	—	—	—	—
North Adams, .	22,019	7	1	1	1	—	—	—	—	—	—	—
Northampton, .	19,431	6	0	2	1	—	—	—	—	—	—	—
Beverly, .	18,650	9	3	2	1	—	—	—	—	—	—	—
Revere, .	18,219	4	—	1	1	—	—	—	—	—	—	—
Leominster, .	17,580	2	—	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	5	1	1	1	—	—	—	—	—	—	—
Westfield, .	16,044	11	5	5	3	2	2	—	—	—	—	—
Peabody, .	15,721	1	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	4	—	1	1	—	—	—	—	—	—	—
Woburn, .	15,308	3	1	1	1	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	1	1	—	—	—	—	—	—	—
Gardner, .	14,699	5	2	2	2	—	—	—	—	—	—	—
Marlborough, .	14,579	3	1	2	1	—	—	—	—	—	—	—
Clinton, .	13,075	4	1	2	1	—	—	—	—	—	—	—
Milford, .	13,055	3	1	3	2	—	—	—	—	—	—	—
Adams, .	13,026	1	0	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	4	0	1	1	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	0	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	6	2	3	2	—	—	—	—	—	—	—
Plymouth, .	12,141	3	2	1	1	—	—	—	—	—	—	—
Webster, .	11,509	2	1	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	2	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	1	—	1	1	—	—	—	—	—	—	—
Arlington, .	11,187	2	0	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	2	—	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	2	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,569,087	911	257	297	159	69	18	8	1	3	3	4
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF MAR. 2, 9, 16, 23 AND 30, 1912.**

DISEASE.	Place.	WEEK ENDING—				
		Mar. 2.	Mar. 9.	Mar. 16.	Mar. 23.	Mar. 30.
Cerebro-spinal meningitis.	Boston, . . .	1	-	2	1	-
	Worcester, . . .	1	-	-	-	1
	Fall River, . . .	-	-	1	-	-
	Haverhill, . . .	-	-	1	-	-
	Somerville, . . .	-	-	1	-	-
	New Bedford, . . .	-	-	-	-	2
Meningitis (other than cerebro-spinal).	Newton, . . .	-	-	-	2	-
	Webster, . . .	-	-	-	1	-
	Wakefield, . . .	-	-	-	1	-
	Malden, . . .	-	-	-	1	-
	Arlington, . . .	-	-	-	1	-
Erysipelas, . . .	Boston, . . .	3	-	1	-	2
	Fall River, . . .	1	-	1	-	-
	Springfield, . . .	1	-	-	-	-
	Arlington, . . .	1	-	-	-	-
	Worcester, . . .	-	2	-	-	-
	Cambridge, . . .	-	1	-	-	-
	Taunton, . . .	-	-	-	-	1
	Quincy, . . .	-	-	-	1	-
Diarrhoeal diseases, . . .	Boston, . . .	5	7	9	6	9
	Cambridge, . . .	2	1	-	1	1
	New Bedford, . . .	3	2	-	1	3
	Springfield, . . .	1	-	-	-	2
	Malden, . . .	1	1	-	1	-
	Chicopee, . . .	2	-	-	1	-
	Lawrence, . . .	-	1	1	1	1
	Taunton, . . .	-	1	-	-	1
	Watertown, . . .	-	-	1	-	-
	Fall River, . . .	-	3	-	4	1
	Worcester, . . .	-	-	-	-	2
	Brockton, . . .	-	-	-	-	-
	Framingham, . . .	-	1	-	-	-
	Attleborough, . . .	-	-	-	-	1
	Holyoke, . . .	-	-	-	-	1
	Gardner, . . .	-	-	-	-	1
Influenza, . . .	Boston, . . .	-	1	1	-	1
	Lowell, . . .	1	1	-	-	-
	Webster, . . .	1	-	-	-	-
	Cambridge, . . .	-	1	-	-	-
Puerperal fever,	Boston, . . .	3	4	1	2	3
	Fall River, . . .	1	-	-	1	-
	Lawrence, . . .	2	1	1	-	-
	Cambridge, . . .	-	1	-	-	-
	Springfield, . . .	-	-	1	-	-

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
MARCH 2, 9, 16, 23 and 30, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—					
	Mar. 2.	Mar. 9.	Mar. 16.	Mar. 23.	Mar. 30.	Total.
Diphtheria, . . . . .	86	81	90	93	105	455
Measles, . . . . .	721	561	646	628	698	3,254
Scarlet fever, . . . . .	144	119	164	124	123	674
Typhoid fever, . . . . .	12	16	18	20	17	83
Tuberculosis, pulmonary, (or not classified)	187	139	181	136	175	818
Tuberculosis, other than pulmonary,	6	11	11	9	18	55
Cerebro-spinal meningitis, . . . . .	3	4	11	4	5	27
Whooping cough, . . . . .	103	98	92	113	65	471
Varicella, . . . . .	120	104	59	98	103	484
Ophthalmia neonatorum, . . . . .	33	26	37	34	48	178
Anterior poliomyelitis, . . . . .	—	—	3	1	4	8
Mumps, <sup>1</sup> . . . . .	16	19	16	21	20	92
Smallpox, . . . . .	11	3	—	—	—	14
Trachoma, . . . . .	2	—	—	1	1	4
Anthrax, . . . . .	1	—	—	—	1	2
Erysipelas, <sup>1</sup> . . . . .	1	5	2	—	1	9
Trichinosis, . . . . .	—	4	3	1	—	8

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of March, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	2	—	2	Meat products:—			
Cider, . . .	—	1	1	Hamburg steak,	3	1	4
Cocoa, . . .	4	1	5	Mince meat, .	1	—	1
Coffee, . . .	3	4	7	Sausages, .	4	1	5
Condensed milk,	4	1	5	Milk, . . .	324	49	373
Confectionery, .	4	—	4	Olive oil, . . .	5	3	8
Cream, . . .	31	1	32	Peanut butter, . . .	1	—	1
Cream of tartar .	1	—	1	Pickles, . . .	3	—	3
Drugs, . . .	73	14	87	Spices, . . .	4	—	4
Eggs, . . .	9	1	10	Table sauce, . . .	6	—	6
Flavoring ex- tracts:—				Tea, . . .	1	—	1
Lemon, . . .	4	1	5	Vinegar, . . .	5	17	22
Vanilla, . . .	6	—	6	Wine, . . .	1	1	2
Honey, . . .	2	—	2	Yeast, . . .	1	—	1
Jams and jellies, .	7	1	8				
Maple sugar, .	4	1	5				
Maple syrup, .	1	—	1				
				Total, . . .	514	98	612

The samples of drugs found to be adulterated were alcohol, spirit of nitrous ether, spirit of peppermint, tincture of vanilla and proprietary medicines.

The cities and towns in which samples were collected were : Andover, Arlington, Boston, Brookline, Cambridge, Chelsea, Everett, Fall River, Haverhill, Lawrence, Lowell, Lynn, Malden, Medford, Melrose, New Bedford, Newton, Quincy, Revere, Somerville, Stoneham, Waltham, Watertown, Woburn.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Ten convictions were secured during the month of March, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Robert Mitchell, . . . .	New Bedford,	Cream (contained formaldehyde).
2	Charles Gray, . . . .	Somerville, .	Denatured alcohol (not labeled).
3	Frank E. Fowler, . . . .	New Bedford,	Essence peppermint (0.49 oil).
4	Annibal Ferrari, . . . .	Boston, . . .	Hamburg steak (contained sulphurous acid).
5	Frank W. Cross, . . . .	Melrose, . . .	Milk (total solids 11.40). <sup>1</sup>
6	William Owens, . . . .	Watertown, .	Milk (total solids 8.38). <sup>2</sup>
7	Carl C. Stanford, . . . .	Lynn, . . .	Milk (total solids 10.75). <sup>2</sup>
8	Christian L. Schlopp, . . .	Boston, . . .	Pork sausage (contained wheat starch).
9	George P. Hopkins, . . .	Boston, . . .	Spirit of peppermint (50 per cent. U. S. P.).
10	William R. Dacey, . . .	Boston, . . .	Tincture of vanilla (made from vanillin). <sup>3</sup>

<sup>1</sup> Skimmed.

<sup>2</sup> Watered.

<sup>3</sup>Appealed.

Fines imposed, \$270.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR MARCH, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
16661	Barker's Hasty Lunch Chocolate.	Knickerbocker Chocolate Company, New York,	Sweetened cocao; percentage of sugar not stated.
16659	Borden's Peerless Evaporated Milk.	Borden's Condensed Milk Company, New York,	No statement of proper dilution to give standard milk.
1394 O	Flag Brand Pure Grape Jelly.	Delano, Potter & Co., Boston, Mass.,	Preserved with a compound of benzoic acid.
1246 O	Spirit of peppermint, Pure essence of peppermint.	K. J. Hart & Co., Dorchester, Mass.,	65.25 per cent. U. S. P. strength.
16833	Milk,	Harvard Extract Company, Cambridge, Mass.,	26 per cent. U. S. P. strength.
9383 R	Milk,	William Owens, Watertown, Mass.,	Total solids, 8.88 per cent.; fat, 2.45 per cent.; contained added water.
q 8608	Milk,	John M. Nakash, Chelsea, Mass.,	Total solids, 11.62 per cent.; fat, 2.85 per cent.; proteins, 3.13 per cent.; skinned milk.
q 8610	Milk,	Joseph Homstein, Chelsea, Mass.,	Total solids, 11.90 per cent.; fat, 2.85 per cent.; proteins, 3.22 per cent.; skinned milk.
9397 R	Milk,	Dobbins & White, North Woburn, Mass.,	Total solids, 11.45 per cent.; fat, 3.40 per cent.; contained added water.
9407 R	Milk,	Nathan Marion, North Woburn, Mass.,	Total solids, 11.72 per cent.; fat, 3.80 per cent.; contained added water.

### INSPECTION OF DAIRIES.

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During the month of March, 1912, 168 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Adams, . . . . .	2	1	50.00	1	50.00
Third inspection, . . . . .	1	1	100.00	—	—
Ayer, . . . . .	6	4	66.67	2	33.33
Second inspection, . . . . .	2	2	100.00	—	—
Third inspection, . . . . .	2	2	100.00	—	—
Clarksburg, . . . . .	17	11	64.71	6	35.29
Second inspection, . . . . .	6	6	100.00	—	—
Framingham, . . . . .	10	10	100.00	—	—
Second inspection, . . . . .	1	1	100.00	—	—
Third inspection, . . . . .	5	5	100.00	—	—
Marlborough, . . . . .	3	3	100.00	—	—
Second inspection, . . . . .	2	2	100.00	—	—
Third inspection, . . . . .	5	5	100.00	—	—
North Adams, . . . . .	10	7	70.00	3	30.00
Third inspection, . . . . .	11	8	72.73	3	27.27
Northfield, . . . . .	21	14	66.67	7	33.33
Second inspection, . . . . .	1	—	—	1	100.00
Southborough, . . . . .	6	6	100.00	—	—
Second inspection, . . . . .	3	3	100.00	—	—
Third inspection, . . . . .	26	26	100.00	—	—
Westborough, . . . . .	4	4	100.00	—	—
Second inspection, . . . . .	3	3	100.00	—	—
Third inspection, . . . . .	18	18	100.00	—	—
Wilbraham, . . . . .	1	1	100.00	—	—
Williamstown, . . . . .	1	1	100.00	—	—
Second inspection, . . . . .	1	1	100.00	—	—

Total number of dairies examined, . . . . . 168  
 Number found to be free from objectionable conditions, . . . . . 145  
 Number concerning which letters were sent, . . . . . 23  
 Total number of conditions to which attention was called, . . . . . 65  
 Percentage of dairies which passed inspection, . . . . . 86.31

Included in the total number of dairies visited were 81 which had started recently in the milk-producing business and were inspected for the first time.

In addition to the above, 8 dairies were visited at which the sale of milk had been discontinued.

In the town of New Ashford it was found that no milk was being produced.

The names of the owners of the dairies found to be worthy of commendation follow:—

## ADAMS.

Chambers, D. W.‡

## Class B.

Haswell, William

## AYER.

## Class B.

Graves, Joseph \*

Hilleur, W. H.

Hoit, Nelson

Hughes, F.

Jewett, E. D.

Stone, Charles E.‡ §

"Town Farm" \*†

Wright, J. A.‡

## CLARKSBURG.

## Class B.

Alderman, Dallus A.\*†

Armstrong, Joseph

Bishop, F. E.\*†

Blanchard, D. W.

Chenail, Joseph E.

Eddy, W. H.

Gleason, E. W.\*†

Halbig, G. F.

Hosley, C. W.

Jourdan, Napoleon \*†

Loverige, C.

Marlow, N.\*†

Mausert, Henry

Oaks, Lewis M.\*†

Van Alstyne, Peter H.

Vanderpool, F. M.

Wood Brothers

## FRAMINGHAM.

## Class A.

Belcher, E. N.

Bowlker, T. J.‡ §

## Class B.

Danforth School for Boys

Parsons, C. P.‡ §

Fenton, Ira B.

Robertson, Mrs. Rebecca

Ford, Miss I. H.

Sampson, Thomas W.‡

Mayo, W. I.

Sanderson, G. O.‡

Noyes, Charles L.‡

Stenson, A. O.‡ §

"Town Farm" \*†

Walkup, H.

Winch, D. P.

Wright, Thomas

## MARLBOROUGH.

## Class B.

Barnes, George ‡

Hapgood, Lyman \*

Sherman, E. P.‡

Bovier Brothers

Martin, George L.

Walker, Joseph ‡

Curtis, Charles W.\*†

Nourse, H. H.‡

Fay, E. L.‡

Percival, D. C.

## NORTH ADAMS.

## Class A.

Briggs, Richard‡ §

"City Farm" ‡

## Class B.

Beaman, John ‡

Hosley, S. S.‡ §

Paul, William

Clairmont, Moses ‡ §

Jacobs, Tonklin

Phelps, C. T.

Clairmont, Napoleon ‡

Jones, David K.‡

Pickwell, John

Crews, Harry ‡ §

Lure, Jacob

Hall, Ernest C.

Lure, Peter

## NORTHFIELD.

## Class A.

"Northfield Seminary"

\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

§ Reported favorably on all previous inspections.

*Class B.*

Belding, E.	Parker, Charles	Waldron, H. D.
Caldwell, F. B.	Parsons, W.	Ward, A. W.
Callahan, John	Randall, Clarence	Yerington, Henry
Carr, Henry F.	Tenney, Charles	
Houghton, Henry C.	Tyler, Leslie	

## SOUTHBOROUGH.

*Class A.*

"Deerfoot Farm" ‡ §	Leland, Mrs. C. F.*†	Newton, L. W.‡
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*Class B.*

Baker, A. L.‡ §	Follensby, Lyman ‡	O'Brien, John ‡
Brewer, N. F.‡	Gilmore, Mrs. Flora	Outhank, William T.‡
Byard, J. L.*	Gough, H. E.‡	Perry, W. C.‡
Byrnes, Miles ‡	Howes, S. H.	Potter, Henry S., Jr.‡
Caldwell Brothers	Lincoln, Harry R.*†	Roach, Martin ‡
Cowern, Mrs. Agnes	Marshall, A. J.‡	Taylor, C. E.‡
Eaton, Harris D.‡	Martin, M. M.	Toombs, A. J.
Fay, F. A.‡	Mauro, P.‡	Uhlman, D. T.‡
Fay, Est. of J. A. J.‡	McHale, James ‡	Wells, E. C.‡
Finn, Lawrence ‡	Neary, Est. of John ‡	Wheeler, H. E.‡
Fisher, G. C.‡	Newton, W. C.‡	

## WESTBOROUGH.

*Class A.*

Trook, Bert*†
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*Class B.*

Adams, H. D.‡	Fay, Walter E.‡	Parker, W. O.*†
Bardwell, Albert M.‡	Granger, Edward ‡	Patterson, Herbert
Bartlett, Frank V.‡ §	Hahn, Louis J.*†	Pollard, Moses ‡
Chamberlain, Wm. E.‡ §	Harrington, C.‡ §	Poskitt, T. W.‡ §
Clark, J. K.	Harvey, E. L.	Ramee, David E.‡
Davis, E. A.‡	Holden, H. E.‡	Rogers, F. P.‡
Estey, Edward G.‡	Lyons, W. F.‡	Vinal, J. P.‡
Fay, Anna S.	McTaggart, Walter ‡	Ward, Mrs. Anna‡

## WILBRAHAM.

*Class B.*

Powell, Edwin C.
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## WILLIAMSTOWN.

*Class B.*

Babcock, A. W.*†	Schinelle, Cyriel
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\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

§ Reported favorably on all previous inspections.

## ACTS OF 1912, CHAPTER 218.

## AN ACT TO REGULATE THE USE OF UTENSILS FOR TESTING THE COMPOSITION OR VALUE OF MILK AND CREAM.

*Be it enacted, etc., as follows:*

SECTION 1. No bottle, pipette, or other measuring glass or utensil shall be used in this commonwealth by any inspector of milk or cream, or by any person in any milk inspection laboratory, in determining, by the Babcock or other centrifugal machine, the composition of milk or cream for the purposes of inspection; or by any person in any milk depot, creamery, cheese factory, condensed milk factory or other place in determining, by the Babcock or other centrifugal machine, the composition or value of milk or cream as a basis for payment in buying or selling, until it has been tested for accuracy and verified by the director of the Massachusetts agricultural experiment station, or by his duly designated deputy or deputies. Every such bottle, pipette, or other measuring glass or utensil shall be submitted to the said director by the owner or user thereof, to be tested for accuracy before the same is used in this commonwealth for the purposes aforesaid. The owner or user shall pay to the said director for the use of the said station as a fee for making the test, a sum not exceeding five cents for each bottle, pipette, or other measuring glass or utensil tested. Any bottle, pipette, or other measuring glass or utensil that has been tested and verified as aforesaid shall be marked by the director or by his said deputy or deputies to indicate the fact, or if tested and found to be inaccurate may be marked by him or them to indicate that it is inaccurate. No bottle, pipette, or other measuring glass or utensil that has been marked by the said director, or by his duly designated deputy or deputies, to indicate that it is inaccurate shall be used in this commonwealth by any person in determining the composition or value of milk or cream.

SECTION 2. Every Babcock or other centrifugal machine used in this commonwealth by any inspector of milk or cream, or by any person in any milk inspection laboratory for determining the compensation of milk or cream for purposes of inspection, or by any person in any milk depot, creamery, cheese factory, condensed milk factory or other place for determining the composition or value of milk or cream as a basis for payment in buying or selling, shall be subject to inspection at least once in each year by the director of the Massachusetts agricultural experiment station or by an inspector or deputy of the said director. The owner or user of any such centrifugal machine shall pay to the said director for the use of said station as a fee for making such annual inspection the actual cost of such inspection for each machine inspected.

Any Babcock or other centrifugal machine used as aforesaid that is not, in the opinion of the director, or of an inspector or deputy of the said director, in condition to give accurate results, may be condemned by the director

or by his inspector or deputy. No Babcock or other centrifugal machine that has been condemned by said director or by an inspector or deputy of the director as not in condition to give accurate results shall be used in this commonwealth by any person for determining the composition or value of milk or cream as aforesaid, unless the machine be changed to the satisfaction of the said director or of his inspector or deputy, and approved by him.

SECTION 3. No inspector of milk or cream, and no person in any milk inspection laboratory, shall manipulate the Babcock or other centrifugal machine for the purpose of determining the composition of milk or cream for purposes of inspection, and no person in any milk depot, creamery, cheese factory, condensed milk factory or other place in this commonwealth shall manipulate the Babcock or other centrifugal machine for the purpose of determining the composition or value of milk or cream as a basis for payment in buying or selling, without first obtaining a certificate from the director of the Massachusetts agricultural experiment station, or his duly designated deputy, that he is competent to perform such work. The fee for such certificate shall be two dollars and shall be paid by the applicant therefor to the said director for the use of the said station. In case any holder of a certificate is notified by the director, or by his duly designated deputy, to correct his use of a Babcock or other centrifugal machine, the actual cost of making an inspection to ascertain if the said person has corrected his use of the said machine shall be paid by the said person or by his employer to the director for the use of the said station. No holder of a certificate whose authority to manipulate a Babcock or other centrifugal machine has been revoked by the director of the Massachusetts agricultural experiment station, or by his duly designated deputy, shall thereafter manipulate in this commonwealth any centrifugal machine for the purposes aforesaid.

SECTION 4. The director of the Massachusetts agricultural experiment station and his duly designated deputy are hereby authorized to issue certificates of competency to such persons desiring to manipulate the Babcock or other centrifugal machine as, in the opinion of the director or his deputy, are competent to manipulate said machines. The said director or his deputy may make and enforce rules governing applications for such certificates and the granting thereof and may, in his discretion, revoke the authority of any holder of a certificate who, in the opinion of the director or of his deputy, or of an inspector of the said director, is not correctly manipulating any centrifugal machine as aforesaid, or is using dirty or otherwise unsatisfactory glassware or utensils.

SECTION 5. It shall be the duty of the director of the Massachusetts agricultural experiment station, and he is hereby authorized, to test or cause to be tested all bottles, pipettes and other measuring glasses or utensils submitted to him as provided in section one, to inspect or cause to be inspected at least once each year every Babcock or other centrifugal machine used in this commonwealth by an inspector of milk or cream, or by any person in any milk inspection laboratory, for purposes of inspection, or by any

person in any milk depot, creamery, cheese factory, condensed milk factory or other place for determining the composition or value of milk or cream as a basis for payment in buying or selling, and to collect or cause to be collected for the use of said station the fees or actual cost of tests and inspections provided for in this act. The said director, his inspectors and deputies are further authorized to enter upon any premises in this commonwealth where any centrifugal machine is used as aforesaid to inspect the same and to ascertain if the provisions of this act are complied with.

SECTION 6. Any person hindering or obstructing the director of the Massachusetts agricultural experiment station, or any inspector or deputy of the said director, in the discharge of the authority or duty imposed upon him or them by any provision of this act, and any person violating any of the provisions of sections one, two and three of this act shall be punished by a fine of not less than fifteen and not more than fifty dollars for each offense.

SECTION 7. It shall be the duty of the director of the Massachusetts agricultural experiment station to see that the provisions of this act are complied with, and he may in his discretion prosecute or cause to be prosecuted any person violating any provision of this act. But this act shall not be construed to affect any persons using any centrifugal or other machine or test in determining the composition or value of milk or cream when such determination is made for the information of such persons only, and not for purposes of inspection, or as a basis for payment in buying or selling.

SECTION 8. A sum not exceeding five hundred dollars yearly shall be allowed and paid out of the treasury of the commonwealth to meet the cost of prosecutions under this act, to be paid upon the presentation to the treasurer of the commonwealth by the director of the Massachusetts agricultural experiment station of proper vouchers therefor.

SECTION 9. The word "person" as used in this act shall include a corporation, association or partnership or two or more persons having a joint or common interest.

SECTION 10. Sections sixty-five to sixty-nine, inclusive, of chapter fifty-six of the Revised Laws, and chapter four hundred and twenty-five of the acts of the year nineteen hundred and nine are hereby repealed.

SECTION 11. This act shall take effect on the first day of July in the year nineteen hundred and twelve. [Approved March 9, 1912.]

#### ACTS OF 1912, CHAPTER 280.

#### AN ACT RELATIVE TO REPORTS AND RECORDS OF BIRTHS.

*Be it enacted, etc., as follows:*

SECTION 1. Physicians and midwives shall, within forty-eight hours after the birth of every child in cases of which they were in charge, mail or deliver to the clerk or registrar of the city or town in which the birth occurred a notice stating the date and place of the birth, giving the street number, if

any, the number of the ward in a city and the family name. Failure to mail or deliver the said notice shall be punished by a fine not exceeding twenty-five dollars for each offence. The notice required by this section need not be given if the notice required by the following section is given within forty-eight hours after the birth occurs.

SECTION 2. Physicians and midwives shall make and keep a record of the birth of every child in cases of which they were in charge and shall, within fifteen days after the birth, mail or deliver to the clerk or registrar of the city or town in which the birth occurred a report of the birth, stating the date and place, the name, if any, of the child, its sex and color, and the names, ages, places of birth, occupations and residence of the parents, giving the street number, if there be any, and the number of the ward in a city, the maiden name of the mother, and whether or not the physician or midwife signing the birth return personally attended the birth. If the child is illegitimate, the name and other facts relating to the father shall not be stated except at the request in writing of both the father and mother filed with the return. The record to be kept by the physician or midwife, as above provided, shall also contain the facts hereby required to be reported to the city or town clerk. The fee of the physician or midwife shall be twenty-five cents for every birth so reported, which shall be paid by the city or town where the report is made, upon presentation to the city or town treasurer of a certificate from the city or town clerk stating that the said birth has been properly reported to him. The report required to be made by this section is in addition to the report required to be made by the preceding section, and as above provided, if made within forty-eight hours of the birth, the report required by the preceding section shall not be required. A physician or midwife who neglects to make and keep the record hereby required, or who neglects to report in the manner specified above, each birth within fifteen days thereafter, shall for each offence forfeit a sum not exceeding twenty-five dollars. The city or town clerk or registrar shall file daily with the local board of health a list of all births reported to him, giving the following facts: date of birth, sex, color, family name, residence, ward, physician or midwife.

SECTION 3. Section three of chapter twenty-nine of the Revised Laws, as amended by chapter ninety-three of the acts of the year nineteen hundred and ten, is hereby repealed. [Approved March 21, 1912.]

#### ACTS OF 1912, CHAPTER 263.

#### AN ACT RELATIVE TO THE SALE OF INSECTICIDES CONTAINING COMPOUNDS OF FLUORINE.

*Be it enacted, etc., as follows:*

Section two of chapter two hundred and thirteen of the Revised Laws is hereby amended by inserting after the words "veratrum viride", in the tenth line, the words:—compounds of fluorine,—so as to read as follows:  
—Section 2. Whoever sells arsenic (arsenious acid), atropia or any of

its salts, chloral hydrate, chloroform, cotton root and its fluid extract, corrosive sublimate, cyanide of potassium, Donovan's solution, ergot and its fluid extract, Fowler's solution, laudanum, McMunn's elixir, morphia or any of its salts, oil of pennyroyal, oil of savin, oil of tansy, opium, Paris green, Parson's vermin exterminator, phosphorus, prussic acid, "rough on rats", strychnia or any of its salts, tartar emetic, tincture of aconite, tincture of belladonna, tincture of digitalis, tincture of nux vomica, tincture of veratrum viride, compounds of fluorine, or carbolic acid, without the written prescription of a physician, shall affix to the bottle, box or wrapper containing the article sold a label of red paper upon which shall be printed in large black letters the name and place of business of the vendor and the words Poison and Antidote, and the label shall also contain the name of an antidote, if any, for the poison sold. He shall also keep a record of the name and quantity of the article sold and of the name and residence of the person or persons to whom it was delivered, which shall be made before the article is delivered and shall at all times be open to inspection by the officers of the district police and by the police authorities and officers of cities and towns; but no sale of cocaine or its salts shall be made except upon the prescription of a physician. Whoever neglects to affix such label to such bottle, box or wrapper before delivery thereof to the purchaser or whoever neglects to keep or refuses to show to said officers such record or whoever purchases any of said poisons and gives a false or fictitious name to the vendor shall be punished by a fine of not more than fifty dollars. The provisions of this section shall not apply to sales by wholesale dealers or manufacturing chemists to retail dealers, or to a general merchant who sells Paris green, London purple or other arsenical poisons in unbroken packages containing not less than one quarter of a pound, for the sole purpose of destroying potato bugs or other insects upon plants, vines or trees, except that he shall record each sale and label each package sold, as above provided. [Approved March 18, 1912.

ACTS OF 1912, CHAPTER, 283.

AN ACT RELATIVE TO CERTAIN HYPNOTIC DRUGS.

*Be it enacted, etc., as follows:*

SECTION 1. Section one of chapter three hundred and seventy-two of the acts of the year nineteen hundred and eleven is hereby amended by striking out the words "or those who are entitled by law to have possession of any of the above mentioned articles", in the twelfth, thirteenth and fourteenth lines, and inserting in place thereof the words:—or a common carrier or porter when transporting any drug mentioned herein between parties hereinbefore mentioned,—so as to read as follows:—*Section 1.* If a person makes complaint under oath to a police, district, or municipal court, or to a trial justice or justice of the peace authorized to issue warrants in criminal cases, that he has reason to believe that opium, morphine, heroin,

codeine, cannabis indica, cannabis sativa or any other hypnotic drug or any salt, compound or preparation of said substances is kept or deposited by a person named therein in a store, shop, warehouse, building, vehicle, steamboat, vessel or place other than by a manufacturer or jobber, wholesale druggist, registered pharmacist, registered physician, registered veterinarian, registered dentist, registered nurse, employees of incorporated hospitals, or a common carrier or porter when transporting any drug mentioned herein between parties hereinbefore mentioned, such court or justice, if it appears that there is probable cause to believe that said complaint is true, shall issue a search warrant to a sheriff, deputy sheriff, city marshal, chief of police, deputy marshal, police officer or constable commanding him to search the premises in which it is alleged that such opium, morphine, heroin, codeine, cannabis indica, cannabis sativa or any other hypnotic drug or any salt or compound or preparation of said substances or any preparation containing the same is kept or deposited, and to seize and securely keep the same until final action, and to arrest the person or persons in whose possession it is found, together with all persons present if any of the aforesaid substances is found, and to return the warrant with his doings thereon, as soon as may be, to a court or trial justice having jurisdiction in the place in which such substance is alleged to be kept or deposited.

SECTION 2. Section three of said chapter three hundred and seventy-two is hereby amended by striking out the words "or otherwise entitled by law to have possession of any of the above mentioned drugs", in the fifth and sixth lines, and inserting in place thereof the words:— or a common carrier or porter when transporting any drug mentioned herein between parties hereinbefore mentioned,— so as to read as follows:— *Section 3.* Whoever, not being a manufacturer or jobber of drugs, wholesale druggist, registered pharmacist, registered physician, registered veterinarian, registered dentist, registered nurse or an employee of an incorporated hospital, or a common carrier or porter when transporting any drug mentioned herein between parties hereinbefore mentioned, is found in possession thereof, except by reason of a physician's prescription, shall be punished by a fine of not more than one hundred dollars, or by imprisonment for six months in the house of correction.

SECTION 3. Said chapter three hundred and seventy-two is hereby further amended by adding thereto the three following new sections, which are to be numbered, respectively, as follows:— *Section 4.* Possession of the above mentioned articles shall be presumptive evidence that such possession was in violation of law. *Section 5.* If after such notice as the court or trial justice shall order, it appears that any article or drug seized under the provisions of section one was, at the time of the making of the complaint, in the possession of the person alleged therein in violation of law, the court or trial justice shall order that such article or drug so seized shall be forfeited to the commonwealth and shall order such article or drug to be sent to the state board of health. Said board may destroy the same or cause the same

to be destroyed or to be disposed of in any way not prohibited by law, and, after paying the cost of transportation of said substances and of the disposition thereof, said board shall pay over the net proceeds to the treasurer and receiver general. *Section 6.* The provisions of section eight of chapter two hundred and seventeen of the Revised Laws shall apply to all judgments and orders made under this act. [Approved March 21, 1912.]

## ATTITUDE OF MASSACHUSETTS MANUFACTURERS TOWARD THE HEALTH OF THEIR EMPLOYEES.

BY WM. C. HANSON, M.D.<sup>1</sup>

### INTRODUCTION.

In the latter part of 1908 a movement was inaugurated among the manufacturers of Worcester County, Mass., to help pay for the care of those persons in their employ who are afflicted with tuberculosis, and a considerable number of employers signed statements indicating in one form or another their approval of the movement. As an organized effort for the reduction of tuberculosis and for the betterment of health conditions among the employees, this movement seems sufficiently important to make it worth while to ascertain what it really is, to what extent manufacturers have joined it, what has been accomplished by it, what the manufacturers who have joined it think of it, and what other Massachusetts manufacturers have to say about it. Furthermore, it seems desirable to consider how far it has been the policy of representative firms in different parts of the State to help financially to any extent an employee taken ill with any disease while in their employ.

First of all, it seems proper to call attention briefly to what the State of Massachusetts is doing for the health and welfare of persons employed in industrial establishments, and to the general relations which exist between employer and employee. The State Inspectors of Health, under the supervision of the State Board of Health — a supervision which is based upon broad, general principles — have, among other duties, charge of the health inspection of industrial establishments. Consequently, they have had opportunity to observe the attitude of manufacturers to their employees and to the laws of the Commonwealth which safeguard the health of the employees. From the data thus collected, manufacturers may be classified in two general groups. There are, on the one hand, those who concern themselves but little with the health and welfare of their employees, men who regard all protective legislation as unnecessary

<sup>1</sup> Reprinted, by permission, from Bulletin 96 of the Bureau of Labor, Department of Commerce and Labor, Washington, D.C.

interference on the part of the State with private enterprise. To this class belong, in the main, the smaller industrial establishments which need considerable looking after in order that they may be kept in reasonably good sanitary condition. Many owners, or men in charge of such establishments, comply with the laws unwillingly, if, indeed, they do not oppose their enforcement. Only such changes are introduced in the buildings as are absolutely necessary, and no attempt is made to see that the changes bring the most fruitful results. In this class of establishments one finds an atmosphere of distrust between employer and employee. The prevailing idea is that their interests are divergent. The employer regards any outlay of expense to improve conditions under which his employees work as an unjust burden placed upon him by the State. The employee, on the other hand, regards any attempt to change conditions with considerable suspicion. Fortunately, however, this class of industrial establishments is rapidly diminishing in number and such a state of affairs as mentioned is fast disappearing.

The second class of manufacturers represents principally the larger industrial establishments. These owners of the larger, and the more progressive owners of the smaller establishments, recognize the fact that their interests are identical with those of their employees, from a purely economic standpoint. These employers recognize that money invested for the maintenance of sanitary and healthful conditions in their establishments is a profitable investment. They also recognize that aside from all humanitarian motives the expense of maintaining good sanitary conditions increases the efficiency of their employees. In this class of establishments one finds a readiness and willingness on the part of the employers to comply with the laws of the Commonwealth. Indeed, suggestions from the State Inspectors of Health as to how to improve conditions are often sought for. Compliance with the laws is not carried out in a perfunctory manner. On the contrary, care is taken that all improvements are utilized in such a way as to secure the best working conditions possible. In short, the manufacturers realize that good working conditions result in obtaining better, more intelligent, and steadier employees. They realize, further, that absences on account of sickness are diminished and a higher grade of efficiency is secured.

#### STATEMENTS OF MANUFACTURERS RESPECTING SANITARY CONDITIONS AND FINANCIAL AID TO EMPLOYEES.

"We have shops in which the sanitary conditions are a source of pride to us. They are clean, well kept, well lighted, and the help are safeguarded against any unhealthy influence. We do not allow any spitting on the floors. . . . The efficiency of our employees depends upon their good health and we recognize the fact."

"While we render no financial aid to those ill, we do try to keep the condition under which our men work as good as we can, and we keep a special oversight of our young apprentices, realizing that upon them we shall later depend for our skilled work. Our doctor examines apprentice boys before the company makes out their first papers, and during the time of their apprenticeship they are under the constant supervision of their instructor, who notifies their parents whenever any of them appear to be ill or below physical par."

"Make the conditions in the mills right and the mill conditions will not make employees sick and in need of aid."

"We intend to keep on bettering mill conditions and have just installed a humidifying apparatus at a cost of about \$20,000."

As to the policy of firms in regard to helping financially, to any extent, an employee taken ill while in their employ with any disease, opinions of representative manufacturers throughout the State are as follows:—

"We have helped employees who have been ill by contributing to a subscription taken up among the employees. This was done for one man ill with typhoid fever and enabled him to pay hospital bills and to keep his family from want for a period of eight weeks. A similar subscription was taken for a man suffering from kidney disease. . . ."

"Formerly we occasionally helped out an employee who was sick, but a few years ago two benefit societies were organized among the help. The only part we play now is to take the monthly assessments from the pay envelopes at the request of the officers of the societies. Sometimes, in the spring of the year, when a good many are out with colds and extra assessments would have to be made, the company assist enough to fill a deficit or to prevent another assessment, but the company has no voice in their management."

"There is no fixed plan or system. Have been accustomed to give assistance in deserving cases, each case being considered individually. In one case a hospital bill was paid and in another rent was given, etc. . . . No discrimination is made in reference to tuberculosis."

"We do nothing financially for those who may become ill from any cause, our care being strictly limited to accidents."

"The firm has not helped in case of illness, tubercular or otherwise, but we have often helped financially in cases of accidents in our shops, even though we carry liability insurance. It not uncommonly happens that an injured man draws his pay while away from his work."

"While we have no settled policy in the matter, this company has helped financially, and probably will continue to do so, its employees who become ill while in their employ, although such cases are selected cases, so to speak; that is to say, it is not done in all cases. We have now on our pay roll a girl ill with tuberculosis, whose expenses are paid by us. I mean that we

allow her full wages. She is not in a sanatorium, however, and pays her own bills. She has not worked for some weeks."

"We pension old and faithful employees. . . . One employee has been drawing full pay for the last five years. In case of accident we assume the entire expense of the case and sometimes pay full wages besides, although this does not mean that we assume liability for the accidents. We are willing to help our employees, and that applies as much to tuberculosis as to anything else."

"The company has no special plan for assisting employees who are ill. A workman who had been employed for less than two years would probably receive no assistance. An older workman would be looked up and such assistance as necessary rendered. Each case is regarded as a personal matter, and the fact that aid is given is not advertised."

Thus a large number of firms, while not having a settled policy in the matter of aiding their employees in case of illness, frequently do so. It is the general opinion of manufacturers, however, that cases of illness among their employees, if dealt with at all, should be dealt with individually, the amount of aid depending on the length and quality of service rendered by the individual. Often old employees who have given faithful service for many years, though the amount of work they do does not warrant it, still receive full pay. Another way in which manufacturers aid their employees is by assisting them to organize and maintain mutual-benefit associations and by contributing generously to the funds of such organizations.

#### SPECIAL HEALTH AND WELFARE WORK.

But besides the attitude taken by manufacturers, who believe that it would be poor policy to assume any financial obligation in case of the illness of an employee, steps have been taken by many manufacturers on their own initiative to promote the health and welfare of their employees. There are various directions in which this activity is manifested; for instance, in the maintenance of attendants or of trained nurses and in the employment of a physician who is either on the premises all the time or who makes periodic visits and is called whenever needed. Nor is the interest of the manufacturer in every instance confined to the factory. Some companies have trained nurses who not only supervise the employees at their work, but visit their homes and do a great deal of educational work. A considerable number of firms are now contemplating the employment of trained nurses for similar work. One company, employing from 2,000 to 3,000 men, women and children, obtained information during the year ending April, 1910, — with the assistance of two trained nurses and a physician, — concerning the health of 2,296

employees, of which number 1,011 were males and 1,285 were females. Two hundred and forty-four cases of illness were of a surgical nature. Ten employees were found to be ill with tuberculosis and were provided for at the State sanatorium at Rutland. With one exception their condition appears to be favorable for recovery. Two have already returned to work, and some of the others have left the sanatorium with the disease arrested. When an employee returns from Rutland he is under observation; his home is visited and such help is given as is practicable in order that he may hold the gain made at the sanatorium. The nurses and physician also discovered a number of boys and girls who appeared to be in danger of respiratory disease, such as influenza or tuberculosis, and in each instance instructions in hygiene were given and the health of the children followed up until normal health was restored and efficient work accomplished. Such special attention is given to employees under eighteen years of age. While generally these young persons are found to be in good physical condition, the teeth and the tonsils in many cases are found to need attention. The ventilation of the workrooms is studied, and, whenever necessary, changes are made which in some instances have given rise to a marked improvement in the output of the pieceworkers and in the energy and effort of the time-workers.

Another striking example of the attitude taken by a manufacturing company toward sickness among its operatives is the following: the company maintains an accident and retiring room in charge of a trained nurse, who, in addition to giving first aid, attends to minor medical cases and visits sick operatives in their homes to insure proper medical attention and care. During the year 1910 more than 1,600 such visits were made. In rendering financial aid to operatives in the past it has been the custom to consider cases individually. Sometimes the wages are paid, sometimes hospital bills, in some cases both. The company maintains 4 free beds at the local hospital. In regard to tuberculosis, the nurse has devoted special attention to investigating the prevalence of this disease during the past two years. In 1910 about 30 cases were cared for, and at the present time 5 are under treatment. In some instances the company pays the bills or part of them, but all patients, through the nurse, are given proper care. It has been customary to turn the chronic cases over to the State or to the local tuberculosis society or to find suitable homes for them in the country. There is a mutual-benefit association with voluntary membership, costing an employee 25 cents per month. Although it is managed by the operatives, the company frequently contributes to its success. This company neither advertises nor conceals the fact that operatives may receive financial aid from the firm in case of sickness and does not object to having it known.

### THE TUBERCULOSIS CAMPAIGN.

Owing to the recent educational campaign relative to tuberculosis many of the Massachusetts manufacturers have been led to take some action to prevent the further spread of the disease. The first firm in the State to take up the work, in a manner following educational campaign lines introduced outside of industrial establishments, was a small shoe company in Oxford. In 1906 this company became actively interested in the question of the prevalence of tuberculosis among its employees. In the spring of 1906 the company distributed a circular among its employees which told in simple language the contagious nature of the disease, the manner of its spread, and the steps that must be taken in order to avoid infection. The circular urged all employees who had a cough to be examined by a physician and to send their sputum for examination to the State Board of Health. It ended with the following statement:—

The firm hopes that it will be notified of any case of consumption occurring among the employees or their families. If any one now in the employ of \_\_\_\_\_ Company has the disease or contracts it and secures admission this year to the State sanatorium at Rutland, the firm will agree to pay his or her board there for three months.

A similar circular has been distributed among the employees of this company each succeeding year, although only one case of tuberculosis among the employees has been brought to light. The employee in question was a girl who worked in the office. She was provided for in the country, where she is living at the present time apparently cured of the disease. The company feels that while the expression in 1906 of its willingness to assume the responsibility of caring for its tubercular employees for a period of three months has resulted in helping only one employee, the educative effect of the campaign among its operatives has been beneficial.

### THE WORCESTER TUBERCULOSIS MOVEMENT.

With this precedent the State Inspector of Health of the Worcester district, in the latter part of 1908, secured written statements from several firms to the effect that in case any employee was found ill with tuberculosis the firm would pay the expenses of said employee for a period of three months or longer in the State sanatorium at Rutland or in some other sanatorium. The first statement was secured November 14. It reads as follows:—

Referring to my conversation with you a few days since, I desire to say that should any of the employees of the \_\_\_\_\_ Company be so unfortunate as to contract tuberculosis, our company will pay their expenses at the Rutland Sanatorium for a period of three months or longer if necessary.

Since that time other firms, at the solicitation of the Inspector, made similar statements in writing, so that up to April, 1911, signed letters representing 34 industrial establishments in Worcester County had been received at the office of the State Board of Health from the inspector of health in the Worcester district. These letters vary somewhat, as follows: —

"Referring to our conversation of this morning in reference to tuberculosis, would say we are pleased to confirm what we told you verbally, that we will be responsible for the expenses of any of our employees afflicted with this disease (tuberculosis) for a period of three months, or possibly longer, at Rutland."

"Referring to my conversation with you yesterday, I beg to say that it has been the habit of the \_\_\_\_\_ Company to pay the expenses of its employees who need assistance at various hospitals where they may have been treated for physical disabilities. It is my recollection that we have already done this at the Rutland Sanatorium and we shall be ready to do so in the future as the occasion may arise."

"We are glad to contribute our assistance and influence in promoting the good work that is being done for those afflicted with tuberculosis. We understand the expense of treatment for each patient (at the Rutland Sanatorium) is at the rate of \$4 per week, and we will pay this amount for at least three months for any one who is found to have the disease while in our employ. We desire to express our appreciation of the efforts being made to wipe out this dreaded disease. We hope this effort may be an enlightening influence that will teach people to better understand their personal responsibility for their own health."

"Referring to conversation with you this day, I desire to say that should any of our old employees be so unfortunate as to contract tuberculosis, we will pay their expenses at the Rutland Santorium for a period of three months."

"Should you find upon examination that any of our old employees require treatment for tuberculosis, we will be responsible for their expenses of \$4 per week at Rutland or other similar place for a period of three months."

"Confirming our conversation of a short time since, would say that this company takes pleasure in saying that for the present we would pay the board of any of our employees who should be unfortunate enough to contract tuberculosis, at Rutland Sanatorium, or a similar institution, for

twelve weeks at the rate of \$4 weekly, provided said employee has been in our employ six months."

"Agreeable to our conversation with you in reference to the matter of paying for a three months' treatment in the State sanatorium for any employee of ours who has contracted tuberculosis, I wish to say that if upon examination of any regular employee of this corporation who has been in our employ for one year or longer, we shall be glad to pay for a three months' treatment in the Rutland Sanatorium or any other sanatorium which would be a benefit to this employee."

"We certainly will fall in line, and should you, upon examination as required by law,<sup>1</sup> find among our regular employees any one who has contracted tuberculosis, the disease being in its first stages, we will care for his or her expense at the Rutland Sanatorium for a period of three months."

It will be seen from the above statements that the manufacturers who have identified themselves with the so-called "tuberculosis movement" have put themselves on record as showing a willingness to assist to a certain extent persons who have become ill with tuberculosis while in their employ. Of the 34 manufacturers who have thus gone on record, 24 have limited the time for which they are to pay the patient's expenses to three months; 4 to three months or over; 1 to four months; whereas 5 did not specify the length of time. Fourteen of the manufacturers specified that the patients should go to the State sanatorium at Rutland, while 20 specified the Rutland or any other sanatorium. One manufacturer limited the offer to those employees who had worked for the firm for six months; 5 manufacturers to those who had worked for the firm for one year or over; 6 to those who had contracted the disease while in their employ; 3 to "old employees;" whereas 9 manufacturers made no qualification. The 34 firms who have given out the written statements may be classified according to the number of persons employed in each establishment as follows:—

NUMBER OF FIRMS.	Number of Employees in Each Establish-ment.	NUMBER OF FIRMS.	Number of Employees in Each Establish-ment.
2, . . . . .	25-50	2, . . . . .	600-700
4, . . . . .	50-100	2, . . . . .	700-800
10, . . . . .	100-200	2, . . . . .	900-1,000
8, . . . . .	200-300	1, . . . . .	Over 1,000
3, . . . . .	300-400		

<sup>1</sup> The State law provides for making inquiry concerning the health of minors in factories. It does not include adults.

The largest number of persons employed in any one of the 34 establishments was 1,300, the smallest number, 32. The total number of employces in all the establishments is about 10,000; the total number of minors about 1,000. The sanitary conditions of these establishments have been found to vary considerably. In some the conditions were excellent, in others only reasonably good, whereas in 3 establishments marked improvements have been made since the signing of the agreement. The results of the sanatoria treatment up to date, so far as submitted to the office of the State Board of Health, are as follows: eleven firms have aided employees found ill with tuberculosis, either by paying their board in the State sanatorium at Rutland or in some other sanatorium, in private homes, or by rendering financial aid in the employee's own home. Twenty-seven employees in all have been aided as follows:—

- 1 employee in each of 4 establishments.
- 2 employees in each of 5 establishments.
- 4 employees in 1 establishment.
- 9 employees in another establishment.

The length of time during which aid was given varied from six weeks to six months, while 1 case was cared for for eight months, and 1 for ten months. Of the persons treated 3 were reported "cured," 8 "condition improved," 1 "condition not improved," 7 "died" and 5 "moved away." Three persons are still under treatment.

It cannot, of course, be questioned that the attitude on the part of those manufacturers who have heralded the agreement as a powerful weapon in the fight against tuberculosis is highly desirable. In the first place the movement itself is of great educational value, inasmuch as it calls to the attention of both employer and employees the existence and prevalence of tuberculosis in factories. The greatest value of such a movement, however, should be that an offer on the part of the manufacturer would lead to the discovery of cases of the disease which would otherwise remain untreated. In this way incipient cases of the disease would be discovered and placed under treatment and more advanced cases segregated. These two procedures are the most powerful weapons in the fight against the spread of the disease. Now let us see how much was actually accomplished in the particular instances mentioned. It has already been shown that considerable good has been done by the aid rendered to the 27 persons found ill with tuberculosis, but this number of persons was found in 11 of the 34 establishments. No records have been submitted to the office of the State Board of Health concerning

employees found with tuberculosis in the remaining 23 establishments. The question arises, therefore, what, more than the mere signing of the letter, has been done in the other 23 establishments?

#### WORCESTER TUBERCULOSIS MOVEMENT FROM POINT OF VIEW OF MANUFACTURERS WHO ALLIED THEMSELVES TO IT.

Interviews with a number of the manufacturers who signed the so-called agreement were of interest. On the whole, it was found that the manufacturers did not consider their letter to the State Inspector of Health to be literally an "agreement." As stated by an employer of several hundred persons, they "simply put themselves on record as showing a willingness to assist to a reasonable extent any worthy employee who has been with them for some time and becomes ill with tuberculosis while in their employ." Seven of the employers interviewed stated that the letter did not bind them to help any of their employees and that they should judge each case on its merits. One employer of more than 900 persons stated that he considered his letter as binding only in the sense that he was willing to consider the advisability of paying the expense at the Rutland Sanatorium or similar institution of any employee found to have tuberculosis. He did not consider that he was obliged to pay any part of the expense of any person who happened to be in his employ who was found to show some sign or symptom of the disease. He said that if his attention was called to the fact that a person who had been in his employ ten or fifteen years now had tuberculosis and that if the said employee had proved himself worthy of help, he would be perfectly willing to assist him by paying toward his expenses while under treatment. He thought that the State Inspector of Health had taken a good step in interesting the manufacturers along this line, but that his work had "limited itself to this point." Another manufacturer, whose letter stated that he would pay the expense of treatment for three months for any person in his employ who might be unfortunate enough to contract tuberculosis, said when consulted, that he did not offer to pay any portion of the expenses of an employee found ill, but merely offered to pay for the physical examination. He ended his letter with the following statement: "We believe that you are doing a good work, which should have the co-operation of all manufacturers and business men in general."

It can be seen from the above interviews that many of the manufacturers who wrote letters did not consider them as binding contracts. In other words, it was not the intention of the most of the manufacturers to deal indiscriminately with their employees. Now, then, the helping of a deserving unfortunate employee discovered ill with tuberculosis,

while praiseworthy, is not going to be a great factor in the eradication of tuberculosis. What is of more importance to the community is the discovery of persons with incipient signs or symptoms of the disease. With this end in view all the manufacturers who signed the so-called "agreement" were asked whether they would be willing to post notices in their factories urging the employees to be examined for the purpose of detecting early indications of the disease. Of the 34 firms only 6 expressed a willingness to post such notices. The other 28 refused to do so. In fact, 7 of the 34 firms said that they did not want it known among their employees that they had committed themselves to pay any part of the expenses of an employee found ill with the disease.

In order to determine the attitude of manufacturers throughout the State to this Worcester movement a great number of them were interviewed, nearly all of whom opposed the adoption of such a policy. This opposition and failure to indorse the movement was not confined to any one class of manufacturers. Indeed, it was met with in some of the best establishments in the State, where a great deal of money is spent annually for welfare work. Manufacturers looked at the situation from different viewpoints, stating their arguments against such a policy as follows:—

#### WORCESTER TUBERCULOSIS MOVEMENT FROM POINT OF VIEW OF MANUFACTURERS OUTSIDE OF WORCESTER COUNTY.

"Class legislation is pernicious. I think the Worcester movement unfortunate in that it favors class legislation and puts a premium on illness, particularly if that illness should be tuberculosis, to the exclusion of other dangerous diseases."

"It is neither wise nor proper to lead persons who work in factories to expect that they will be cared for if afflicted with tuberculosis or any similar disease."

"To bind employers to an agreement to assume the care and pay for the treatment of employees at sanatoria is to break down the morale and independence of the individual and to encourage in its wake pauperizing expectancy with its direful results."

"It seems to me that an enabling act of the Legislature would be necessary before the corporations could contribute to the relief of sufferers from tuberculosis or any other disease such as appears to be done by Worcester manufacturing concerns."

"I fail to see how we could do much along humanitarian lines without the consent of the stockholders, much as the management might desire to do it. Our mills are run by stockholders, by a board of directors with a president, treasurer and superintendent. . . ."

"Do you know of other business interests engaged in such movements? Are the railroads, express companies, butchers and bakers sending their

employees afflicted with tuberculosis to sanatoria and paying their bills? Pay the employees what is due them; make the mills sanitary. We cannot feed, clothe, nurse and doctor the employees. It is not business. I am not in favor of such a thing."

"I am opposed to the Worcester idea as tending to an assumption that corporations are liable for such illness as tuberculosis or other dangerous diseases."

"Welfare work or special action by a wealthy manufacturer, for special reasons, is taken up and urged by interested persons as the standard for all, which in many instances works a considerable hardship." (The manufacturer pointed out that while he was not opposed to welfare work or tuberculosis work, in numerous instances it has not seemed to accomplish all that was anticipated.)

"Better housing, better the mill conditions. Pay good wages and the employees would be able to pay their own way in everything. . . . The State may find this problem of helping its people, caring for and treating them, a very large one indeed."

"Our mills are better than ever they were. The tenements, on the other hand, are but little improved. Some of our employees come and go weekly. They seldom spend fifty hours a week in any one mill. What do they do and where are they the other one hundred and eighteen hours in the week? The tenement landlord has them more hours in the week than we do. I don't see why any of our mills should pay for the care and treatment of diseased persons simply because they are on our pay rolls."

The arguments thus advanced against the Worcester policy may be summarized as follows: the employer should pay his employees the best possible wages and provide for them the best sanitary conditions, both of which factors would result in mutual advantage. If an employee who has rendered faithful service for many years is unfortunate enough to be taken ill, most manufacturers recognize a moral responsibility and are ready to render assistance. A great number of manufacturers also assume responsibility in aiding employees who are accidentally injured at their work, but they cannot see why they should be held responsible for a disease which is perhaps contracted outside of the factory. Why should not the landlord of tenements, in which disease is often contracted, be held responsible? Why should not he be required to pay for his tenants who are taken ill with tuberculosis? Corporations are not adapted for such work which, at best, is to be regarded as a charitable undertaking, and many employers feel that they want to do their charity work in their own way. One manufacturer, employing about 1,500 operatives, who has done a great deal for his employees, when asked his opinion of the plans adopted by the Worcester manufacturers said:—

We do not believe in charity because we think it fosters improvidence and that when a corporation undertakes this sort of work it is getting upon dangerous ground. As a business proposition and one that pays well, we see that our operatives work under the most favorable conditions we are able to provide. For the same reason we provide a trained nurse and an accident and retiring room for our operatives. She dresses minor wounds and attends to the lesser complaints of the operatives, especially of those under age and women. . . . She visits the homes of our tubercular former operatives and gives instruction to the patient and family. . . . In regard to the tuberculosis problem, I think the plan asking the manufacturer to send all his tubercular operatives to Rutland is utterly impracticable. For one thing, it fosters the paternal attitude which is an unwise stand to take. We consider the cases as individuals, and since we began the work, a little over a year ago, we paid the expenses of about 15 operatives for as long as it was necessary for them to remain there. So far we have not been imposed upon by the people seeking our employ for this reason, and before paying expenses we consider the length of service, character of the work, etc. We do it because we want to do our share in helping the State with this problem. We intend to continue this policy and do not intend to conceal or advertise it.

To sum up, an agreement on the part of a manufacturer to help tubercular employees can be of value from a standpoint of the general campaign against tuberculosis, provided it leads to the discovery of new cases. In order to detect new cases the employer must be willing to post notices to call attention to the disease and to urge physical examinations. In most of the Worcester factories no examination of the employees was made following the so-called agreement. Not even notices were posted to urge the employees to be examined in order to detect any early signs of tuberculosis. Moreover, many of the manufacturers in Worcester County do not consider that their letters bind them to any contract, stating emphatically that it is not their intention to render aid to any of their employees, but that they will consider individual cases. This principle is, as we have seen, no different from that of a great number of Massachusetts manufacturers who provide the best practicable working conditions for their employes.

## WHAT HAPPENS TO PATIENTS RELEASED FROM STATE SANATORIA AND LOCAL TUBERCULOSIS HOSPITALS?

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In the cities of Fall River, Lawrence, Haverhill and Newburyport 91 persons who, at one time, had been under treatment for tuberculosis in one of the State sanatoria, or in a local tuberculosis hospital, were traced, and, whenever possible, information obtained concerning their present state of health. The patients were not selected. The facts were dispassionately collected and are, therefore, of the highest value.

### *Patient No. 1.*

This patient was discharged from Lakeville Dec. 20, 1910, against advice. Was out and around for a short time and was said to have been careless in personal habits. Resided in a tenement dwelling. Now dead.

### *Patient No. 2.*

This patient, a man, was discharged from Lakeville Dec. 28, 1910. Could not be found at the address given on his discharge notice from Lakeville. Neither inquiry at the office of the local board of health of the city in which he formerly resided, nor inquiry at the headquarters of the local anti-tuberculosis society, brought light concerning his whereabouts. Apparently, the patient got out of the way in order to avoid being found by the health authorities.

### *Patient No. 3.*

This patient, a man, discharged from Lakeville Jan. 12, 1911, went directly home and to bed, where he stayed until he died, January, 1912. In this instance the sanitary conditions in the home were very good, and proper care was taken to prevent the spread of infection.

### *Patient No. 4.*

This patient, a man, was discharged from Lakeville Jan. 19, 1911, for breach of discipline. The residential address given on the discharge paper was that of a tenement block, where it was found on investigation that the patient had lived previous to his stay in the sanatorium. No knowledge of this patient's whereabouts could be found, either by the local health authority or by myself.

*Patient No. 5.*

This patient, a man, absconded from Lakeville on Feb. 20, 1911. He first returned to a tenement block where he lived before entering the sanatorium. Then he went to a tenement in another part of the city, again to a tenement in another locality, and still later to another tenement in the same city where he was found to be living. This tenement was in a two-story block where the patient lives with his wife and four children. He was found to be working as a weaver in a local cotton mill, and he was there sought out, questioned and examined. His present history consists of a decided loss in weight, nightly chills and sweats. He is short of breath, weak and nervous. When last seen he was attending 10 looms, and was kept busy practically every minute of the day. A physical examination revealed the unmistakable fact that he was in an advanced stage of tuberculosis. When last seen, only a short time ago, his home conditions were found to be poor. His wife, on physical examination, was shown to be in a moderately advanced stage of tuberculosis. Both man and wife slept in a stuffy room with the windows closed at night. Evidently, the man had not benefited by his stay at the sanatorium. He and his wife were noticed to be careless in their habits, and to expectorate promiscuously. A visiting nurse for a local anti-tuberculosis association stated that 2 of the 4 children in the family were tubercular.

*Patient No. 6.*

This patient, a girl, was discharged from Lakeville on March 31, 1911, as an arrested case. She returned to the address given on her discharge card, a clean, orderly apartment in a tenement block, and eventually took up her studies in school. While the girl was discharged as an arrested case, and her parents now believe her to be in excellent health, a physical examination showed that she was in a moderately advanced stage of tuberculosis. She had lost 4 pounds since leaving the sanatorium. She expectorated occasionally, and took no special sanitary precautions to prevent the spread of infection.

*Patient No. 7.*

This patient, a girl, was discharged from Lakeville May 1, 1911, for breach of discipline. The only information that could be obtained relative to this patient was that she returned to her home,—a tenement, with distinctly bad sanitary conditions; shortly afterwards was married and went away to parts unknown.

*Patient No. 8.*

This patient, a woman, was discharged from Rutland Nov. 25, 1911, as an arrested case. She was found to live in a clean, neat little cottage house. She has been out and about much of the time and has just returned from a visit out of the State. Physical examination, together with a history of repeated attacks of coughing and expectoration, showed that there was an

active process of the disease in the upper part of one lung. She was having a continued afternoon temperature.

*Patient No. 9.*

This patient, a boy, was discharged from Lakeville on June 9, 1911, for breach of discipline. He returned to his home amidst distinctly bad sanitary conditions. His father had been an alcoholic for fifteen years. The boy was careless and dissolute. Finally, last month, he was committed to an industrial school as an incorrigible.

*Patient No. 10.*

This patient, a girl, was discharged from Lakeville July 19, 1911. The condition of the patient on discharge from the sanatorium was not given. She returned to her home, a neat tenement apartment, then went to a local tuberculosis hospital where she died three weeks after admission.

*Patient No. 11.*

This patient, a man, was discharged from Lakeville Nov. 21, 1911. His condition on discharge was not given. The local board of health was found to have no knowledge relative to the patient. Moreover, the case had never been reported to the board. All track of this individual is lost.

*Patient No. 12.*

This patient, a woman, was discharged from Lakeville July 19, 1911. Her condition on discharge was not given. She returned to her original address, stayed there for a time, and then went to live with her sister. Later, she returned to Lakeville, where she is at the present time. When at home she was said to have been careless in her habits and to take no sanitary precautions to prevent the spread of infection.

*Patient No. 13.*

This patient, a man, was discharged from Lakeville Aug. 9, 1911, with no statement as to his condition at that time. He returned to his residence before entering the sanatorium, took his bed and died on the first day of the following month, Sept. 1, 1911. After his return from the sanatorium no advice or assistance was given him by the local health authority.

*Patient No. 14.*

This patient, a man, was discharged from Lakeville Aug. 2, 1911, with no statement as to his condition. He did not return to his former home, but went to a town in another State, where he died during the winter.

*Patient No. 15.*

This patient, a woman, was discharged from Lakeville on Aug. 20, 1911, with no statement as to her condition at that time. She stated, however, that she was called an "arrested case." She was found to live in a small, clean cottage amidst good sanitary conditions. She, however, sleeps in a stuffy room with the windows tightly closed during the night. With a history of poor appetite, occasional night sweats, marked weakness, she was found on physical examination to have a moderately high temperature with rapid pulse, together with such physical signs as to make it clear that she is in a moderately advanced stage of the disease with an active process going on in one lung.

*Patient No. 16.*

This patient, a woman, was discharged from Lakeville Aug. 16, 1911, with no statement as to her condition at that time. She returned to her former residence, worked out at house cleaning for two or three months, then went to the Rutland Sanatorium. While at home she received no advice or assistance from the local health authority. She lived in a crowded apartment in a three-tenement block.

*Patient No. 17.*

This patient, a woman, was discharged from Lakeville Aug. 30, 1911, with no statement as to her condition at that time. No knowledge concerning this patient could be obtained from the local health authority, and no trace of the patient could be found.

*Patient No. 18.*

This patient, a man, was discharged from Lakeville Sept. 11, 1911, for a breach of discipline. No statement was given as to his condition at the time of discharge. The man's whereabouts are unknown.

*Patient No. 19.*

This patient, a woman, was discharged from Lakeville, Sept. 29, 1911, against advice, with no statement as to her condition at that time. The report of the patient's illness had never been made to the local health authority, and no trace of the patient can be found.

*Patient No. 20.*

This patient, a man, was discharged from Lakeville Sept. 3, 1911, against advice. The local board of health had no knowledge as to his whereabouts, and no trace of the patient can be found.

*Patient No. 21.*

This patient, a man, was discharged from Lakeville Sept. 29, 1911, against advice. He returned home in bad condition, living but a month. He was out

and about for a short time only. It was said that he took little or no care of himself, and was careless in his habits as regards the avoidance of spreading infection.

*Patient No. 22.*

This patient, a woman, was discharged from Rutland April 11, 1911. Has not improved. She was given some care and attention by the local board of health, but she died on the 19th of the September following. The tenement in which she lived was occupied by 8 other persons.

*Patient No. 23.*

This patient, a man, was discharged from Rutland Sept. 26, 1911, as an arrested case. On returning home he went to a local tuberculosis hospital, where he stayed a week. He then stayed at home and was out and about on the street and elsewhere. He was said to have been careless in his habits as regarding avoidance of spreading infection. He lived in a three-story tenement, amidst distinctly bad sanitary conditions, where he died the following December.

*Patient No. 24.*

This patient, a man, was admitted to Rutland in June, 1911, and discharged from that sanatorium on Sept. 11, 1911, as an arrested case. While at Rutland his sputum was always found to be negative. Physical examinations showed no signs of tuberculosis. The man works every day at hard labor. He has just been insured by one of the best known insurance companies for \$3,000. It is believed that the man never had tuberculosis.

*Patient No. 25.*

This patient, a man, was discharged from Rutland, date not given. The local board of health had no knowledge of this man. According to some reports he was dead. The man was found to be living in a porch shack, and to have considerable cough night and morning. On physical examination he showed evidence of an active process of tuberculosis in one lung. His home conditions are sanitary.

*Patient No. 26.*

This patient, a man, was discharged from Rutland Oct. 27, 1911, as an arrested case. He returned to his original residence, a five-tenement block. He slept alone in a small room which had but one window, and this not exposed to the sun at any time during the day. Since his discharge he has worked off and on as a spare weaver (sometimes known as "sick weaver"). Recently he discontinued this work to sell candy on the street for a candy manufacturer. Physical examinations showed the patient's condition to be temporarily improved.

*Patient No. 27.*

This patient, discovered during an investigation of the preceding 26 patients, left Rutland in June, 1908. Since discharge he has lived in 2

cities and 1 town, changing residences 6 times in four years. He has worked in 2 mills and has been an insurance agent. He has lived in 4 tenements and 2 boarding houses, and has taken meals in 24 restaurants. He travels daily in the electrics and goes to the theatres weekly. Physical examinations show this man to be in an advanced stage of tuberculosis and a constant menace to persons with whom he comes in contact.

A classification of the 27 patients investigated falls naturally into three groups:—

*Group A.* — Those patients who were known to be alive on February 1, this year, viz., 9 in number.

*Group B.* — Those patients known to have died previous to February 1, — 10 in number, or 37 per cent. of the total number investigated.

*Group C.* — Those patients — 8 in number — who were lost sight of at the time of their discharge from the sanatorium. Concerning these patients there is no definite information available.

Of the 9 patients known to be alive on February 1, this year, 2 had returned to the sanatorium and 1 had been committed as an incorrigible to a correctional institution. Physical examination of the remaining 6 patients showed 2 patients with the disease far advanced, 1 well advanced and 2 moderately advanced. The remaining patient appeared to be temporarily improved. Each of the 6 patients examined had, at some time within the past two years, been resident in a State sanatorium, and should have profited by the instruction received there. These persons, on returning home, should have taken reasonable precautions to protect their own health and the health of those with whom they came in contact. The exact conditions under which these persons were found to be living, and the precautions they were taking to protect others from infection, may be summed up as follows:—

1. Patient living in a tenement surrounded by distinctly bad sanitary conditions and working in a cotton mill; spitting promiscuously, and taking little or no care of himself or thought of others; wife ill with tuberculosis, and it was alleged 2 children ill with the same disease.

2. A patient discharged as arrested found living under good sanitary conditions, but careless as to expectoration.

3. A patient discharged as arrested now in a moderately advanced stage of the disease. Was found living under good sanitary conditions, but careless as to expectoration. Has traveled considerably since his discharge.

4. Patient was found living in a neat cottage home, but was afraid

of fresh air; slept in a close, stuffy room, with windows tightly closed. Went out occasionally, and was careless about expectorating.

5. Patient discharged as arrested. Has been working as a spare weaver in a cotton mill. Slept alone in a room with windows open, but has been taking no care as regards expectorating.

6. A migratory patient in a well-advanced stage of tuberculosis, who was a constant menace to other persons.

The following facts were disclosed as regards the patients who left the sanatoria and since died:—

1. Careless in habits; lived in tenement house under bad sanitary conditions.

2. Did not return to city in which he lived before going to the sanatorium.

3. Careless in personal habits and a menace to others until he died.

4. Lived in a tenement-house home; was out and about, spitting promiscuously and careless in personal habits.

5. Living under bad sanitary conditions.

6. Actively sick with tuberculosis and a constant danger to other persons.

The remaining 4 patients in this group received proper care, living amidst good sanitary surroundings.

Of the patients concerning whom no definite information is available at the present time, 1 ran away from the sanatorium; 3 were discharged for breach of discipline; and 2 were never reported to the local board of health. Of the remaining 2 patients no information of any kind has been available since they left the sanatorium.

Briefly stated, the investigation disclosed the fact that 9 of the 27 patients discharged from a State sanatorium were known to be living, while 10 had died since leaving the institution, and 8 were at large without any knowledge of the fact by a local health authority. Of the 9 persons known to be living 3 are now inmates of a State sanatorium, while each of the remaining 6 is careless as regards the spread of infection. A striking fact which the investigation disclosed is that each patient returned from the State sanatorium as "an arrested case" was found on physical examination either in an advanced or moderately advanced stage of the disease.

The investigation further disclosed the fact that persons are discharged from State sanatoria to go whither they may. They sometimes return to their original place of residence, or they may seek new domiciles in the same city. They may never return to their original location, but may go to other cities or even other States. In any event

it appears that no person or organization is responsible or assumes responsibility for the care and conduct of patients discharged from a State sanatorium.

It is a fact that most of the 27 patients investigated on leaving the sanatoria have been found to be careless in their personal habits, especially as regards the prevention of the spread of the disease among well persons. They have thus failed to profit by the instruction received at the State hospitals.

Another fact made clear by the investigation and well illustrated by the experience of one patient is that some of the physicians who recommend sanatorium treatment are not sufficiently expert in making a proper diagnosis.

Another fact made clear by the investigation is that a considerable proportion of the patients discharged from a State sanatorium as an "arrested case" relapse immediately, or shortly afterwards, into a condition of well-advanced sickness. On returning home the patients are generally left to their own resources.

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Following is a report on the whereabouts and condition of 19 persons who have received treatment at a State sanatorium:—

*Patient No. 1.*

This patient, a man, returned from the Rutland Sanatorium July 10. He built a shack out of doors where he has since slept at night. He thinks that his condition has improved since his return home. When visited he was under care of a physician; had continued temperature, coughed and expectorated considerably. His sanatorium training evidently had not stood him in good stead, for he stated, "You see, I have this little metal flask to spit in while at home, but on the street, of course, I spit anywhere." The board of health had never investigated this patient. The physician had not reported the case.

*Patient No. 2.*

This patient, a girl, left the North Reading Sanatorium July 8, after a stay of a little over a month. She is confined to her bed under the care of a local physician and receives some attention from the local anti-tuberculosis society. The board of health has never investigated the patient, although informed of her return.

*Patient No. 3.*

This patient, a woman, was admitted to the Rutland Sanatorium February 15. The disease is well advanced and the patient expectorates considerably. The local board of health has taken no steps to prevent the spread of infection.

*Patient No. 4.*

This patient, a woman, discharged from the North Reading Sanatorium, was, when visited, bedridden and under the care of a private physician. This case was reported to the board of health and some assistance rendered the patient by the local anti-tuberculosis society.

*Patient No. 5.*

This patient, a man, on returning from a State hospital, was given care and assistance at home by the local anti-tuberculosis society.

*Patient No. 6.*

This patient, a man, was discharged from the North Reading Sanatorium as an advanced case. He returned to his home, then went to other lodgings and finally to the City Hospital where he died. None of the premises where he resided were disinfected or cleansed by authority of health officials.

*Patient No. 7.*

This patient, a man, was discharged from the North Reading Sanatorium. He has not seen a doctor since his return, but was unable to work because of the pain in his side. He has some cough and expectoration. His dwelling is in a very unsanitary condition, and he is neither taking precautions in behalf of himself nor others. The local board of health has sent a nurse to visit this man and to give him advice.

*Patient No. 8.*

This patient, a woman, was discharged from the North Reading Sanatorium. She returned to her home where she died ten days later. She was visited and given advice by the local board of health previous to her death, but the premises, following her death, were neither disinfected nor cleansed.

*Patient No. 9.*

This patient, a woman, was discharged from the North Reading Sanatorium. She returned to her original residence and then moved to other quarters. She was visited and given advice by a nurse employed by the local board of health. Premises that had been occupied by the patient were neither disinfected nor cleansed.

*Patient No. 10.*

This patient, discharged from the North Reading Sanatorium, has some cough and expectoration, but is not under the care of a physician. Sanitary conditions of the home are good.

*Patient No. 11.*

This patient, a woman, was discharged from the North Reading Sanatorium. She has a tubercular ulcer on the leg. She has no medical attendance, although states that she has consulted the city physician. The sanitary conditions surrounding the dwelling of this patient were found to be distinctly bad.

*Patient No. 12.*

This patient, a man, was discharged from the North Reading Sanatorium. He left the residence to which he returned and has lived in various places since. When last seen he was at work in a tailor shop.

*Patient No. 13.*

This patient, a man, was discharged from the North Reading Sanatorium. On his return he went to the City Hospital, where he is now an inmate.

*Patient No. 14.*

This patient, a girl, came from the Rutland Sanatorium to her residence, where she remained two weeks, then went to a farm in a neighboring town. The patient's illness was not reported by the family to the board of health. The premises where she formerly resided were not disinfected after she left for the farm.

*Patient No. 15.*

This patient, a man, on leaving the North Reading Sanatorium returned home and started to work as a hack driver and doing odd jobs. He was examined by a physician for the local anti-tuberculosis society, but his illness was not reported to the local board of health. He was found, with the disease in an active stage, coughing and expectorating promiscuously. At this time he was preparing to move to another tenement.

*Patient No. 16.*

This patient, a woman, on returning from the Rutland Sanatorium, moved to two different houses. No action was taken to disinfect or cleanse the premises which she vacated.

*Patient No. 17.*

This patient, a woman, was discharged from the North Reading Sanatorium. She then went to another institution from which she ran away, and later was readmitted to North Reading. The premises where she lived were not disinfected. The case was never reported to the local board of health, although during the interval when not in a hospital was under the care of a physician.

*Patient No. 18.*

This patient, a man, has, since leaving the North Reading Sanatorium, been under the care of a "society doctor." His illness has not been reported to the local board of health by the physician attending him. The patient is out and about each day, and is coughing and expectorating promiscuously.

*Patient No. 19.*

This patient, a boy, left the Rutland Sanatorium, went to the Lawrence Tuberculosis Hospital for a while, then ran away. His family have since changed their residence, but the premises vacated by them have not been disinfected or cleansed although now occupied by another family. The boy for some time has been under the care of a physician who, however, has never reported the disease to the local board of health. Although expectorating promiscuously he is out and about each day. He goes to moving-picture shows a good deal.

A study of the facts disclosed by the investigation of the 19 cases shows —

1. The absence of a strict supervision of tuberculosis patients who have had hospital treatment in a State sanatorium.
  2. The need of local hospital provisions for the care and treatment of a certain proportion of cases.
  3. Failure on the part of some physicians to report the disease.
  4. Failure of local health authorities in some instances to follow up reported cases and see that the patients and the public are properly cared for.
  5. The necessity of more practical co-operation between existing local and State authorities.
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Following is a report on the whereabouts and condition of 45 persons who had received treatment at the Lawrence Tuberculosis Hospital, a local institution:—

*Patient No. 1.*

This patient, a man, was discharged as an arrested case. He went to his residence and then to New Hampshire. The premises vacated by him were not disinfected or cleaned. When in his Massachusetts residence his illness was reported to the board of health by the hospital authorities.

*Patient No. 2.*

This patient, a woman, ran away from the hospital and went to her residence, whence she removed to another residence. On returning to her former residence she consulted a physician who, however, failed to report the case

to the board of health. In fact, no report of this case from any source had been received by the board of health.

*Patient No. 3.*

This patient, a woman, was discharged against advice as an advanced case. She returned home and then moved to another residence. Soon after reaching home from the hospital she put herself under the care of a physician. When seen she had a bad cough and much expectoration. The premises vacated by the patient were not disinfected or cleaned. The case was reported by a physician previous to admission to the hospital, but was not reported by the hospital authorities or by the physician attending the patient on returning from the hospital.

*Patient No. 4.*

This patient was discharged, apparently, as an "arrested" case. The patient was reported by the hospital authorities to the board of health, but could not be found at the address given.

*Patient No. 5.*

This patient was discharged for intoxication as an "advanced" case. On inquiry at the address reported by the hospital authorities to the board of health it was found that no such person ever lived there.

*Patient No. 6.*

This patient was discharged to go to the Lawrence General Hospital for an operation and died within a month after leaving the latter hospital. The local board of health had never received a report of this case from any source.

*Patient No. 7.*

This patient, a woman, ran away from the hospital, but careful inquiry and search at the address to which it was stated she had returned failed to elicit any information whatever with reference to her whereabouts. The board of health had never received a report of this case from any source.

*Patient No. 8.*

This patient, a man, ran away from the hospital and returned home. Although constantly coughing and expectorating he went about at his pleasure until he became so ill that he was confined to the house. Although seen and cared for by several physicians the only report of this case ever received by the board of health was that of the hospital authorities.

*Patient No. 9.*

This patient, a man, ran away from the hospital and has since been out and about at his pleasure, although constantly coughing and expectorating

promiscuously. Since his return home he has been cared for by two physicians, but the only report of the case received by the board of health was that of the hospital authorities.

*Patient No. 10.*

This patient, a man, was twice admitted to the hospital and twice ran away. No report of this patient was made to the board of health by the hospital authorities, although he was subsequently reported by a private physician to whom he went for advice.

*Patient No. 11.*

This patient, a woman, was discharged from the hospital to go to the City Hospital for an operation. The premises vacated by the patient were not disinfected or cleaned. No report of the case was made to the board of health by the hospital authorities.

*Patient No. 12.*

This patient, a man, ran away from the hospital. When seen he was found living in a dilapidated shack amidst bad sanitary surroundings, and evidently in an advanced stage of tuberculosis. Although unable to work he was out and about more or less each day, and reported occasionally to the Lawrence Anti-Tuberculosis league for advice. The case was reported to the local board of health by the hospital authorities.

*Patient No. 13.*

This patient, a man, was discharged from the hospital for drunkenness. He stayed at home for a while, going out and about at pleasure, drinking much, until upon the application of his wife he was sent to the North Reading Sanatorium whence, however, he has since returned. The case was reported to the board of health by the hospital authorities.

*Patient No. 14.*

This patient, a man, was discharged from the hospital for intoxication. He subsequently left the city and went to parts unknown. The patient was never reported to the board of health by the hospital authorities, but after his discharge from the hospital he was reported by a physician to whom he applied for advice.

*Patient No. 15.*

This patient, a woman, left the hospital on a "permit from the local board of health." Although an advanced case with daily temperature and much cough and expectoration, she traveled about considerably and has been out of the State since her release from the hospital. The case was never reported to the local board of health by the hospital authorities.

*Patient No. 16.*

This patient, a woman, was discharged from the hospital as an "apparently arrested" case. When seen she was found to have some cough and expec-

toration. The case was reported to the board of health by the hospital authorities.

*Patient No. 17.*

This patient, a girl, ran away from the hospital, stayed at home for a short time and then went to another State. The premises vacated by her were not disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 18.*

This patient, a man, ran away from the hospital. When seen he was found in a moderately advanced stage of tuberculosis with considerable cough and expectoration. He was traveling about the city at his pleasure. Although sent to the hospital by a physician, and cared for by a physician since his return from the hospital, the only report upon the case received by the local board of health was that submitted by the hospital authorities.

*Patient No. 19.*

This patient, a woman, ran away from the hospital and returned to her residence, a boarding house. She stayed there for a few days and then moved to another residence, where she placed herself under the care of a physician. This physician apparently failed to report the case, as the only report received by the board of health was that submitted by the hospital authorities.

*Patient No. 20.*

This patient, a man, in an advanced stage of tuberculosis, was discharged from the hospital for intoxication. Upon investigation it was found that the address he had given the hospital authorities was one at which he had never lived. He was said to be a common drunkard, sleeping and eating where opportunity best afforded. The case was reported to the board of health by the hospital authorities.

*Patient No. 21.*

This patient, a woman, was discharged from the hospital as "apparently arrested." She returned to her home, stayed there for a while and then went to parts unknown. The premises vacated by her were never disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 22.*

This patient, a woman, was discharged from the hospital as an "advanced" case, on her statement that she was going to Rutland. She did not go to Rutland, but returned to her home, where she placed herself under the care of a physician. The premises vacated by the patient were not disinfected or cleaned. The only report of the case received by the board of health was that submitted by the hospital authorities.

*Patient No. 23.*

This patient, a man, was discharged from the hospital as an "arrested" case. From the hospital he went to his home, stayed there a short time and then moved to another residence. When seen he had a bad cough and some expectoration. He was out and about, spitting promiscuously. The premises vacated by the patient were not disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 24.*

This patient, a girl, was discharged from the hospital as an "apparently arrested" case. She came back to her home to live amidst unsanitary surroundings. When seen it was found that her cough had returned and that she had gone to work as a "doffer" in a local mill. No report of the case has ever been received by the local board of health.

*Patient No. 25.*

This patient, a girl, an "advanced" case, ran away from the hospital. No trace of her could be found at the address given the hospital authorities. The premises vacated by her were not disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 26.*

This patient, a woman, was discharged as an "advanced" case "against advice." Upon investigation it was found that after leaving the hospital she lived at four different addresses. None of the premises vacated by her had been disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 27.*

This patient, a girl, was discharged from the hospital as an "apparently arrested" case. She returned to her home, stayed there for a while, then went to work in a restaurant. When seen she was found to have considerable cough and an apparent return of the disease. The case was reported to the board of health by the hospital authorities.

*Patient No. 28.*

This patient, a boy, was discharged from the hospital as an "apparently arrested" case. He returned to his home and played around the street and in other homes until September, when he went to school. When seen, the boy had lost weight, and was coughing and expectorating almost constantly. He was found to have had hemorrhages since his return from the hospital. The case was not reported to the board of health by the hospital authorities, but was reported by a physician previous to admission to the hospital.

*Patient No. 29.*

This patient, a man, was discharged from the hospital as "troublesome." He lived amidst bad sanitary surroundings and, although in an advanced stage of the disease, worked each day in a paper mill. The case was not reported to the board of health by the hospital authorities, but was reported by a physician previous to admission to the hospital.

*Patient No. 30.*

This patient, a woman, was discharged from the hospital as an "apparently arrested" case. She returned to her home, and when seen was found to have considerable cough and expectoration. She appeared to be in a moderately advanced stage of tuberculosis. No report of her case had been received by the board of health from any source.

*Patient No. 31.*

This patient, a woman, was discharged from the hospital as an "apparently arrested" case. When seen she was found living in a crowded tenement, although she appeared to be in good health. The case was reported to the board of health by the hospital authorities.

*Patient No. 32.*

This patient, a woman, was discharged from the hospital as an "advanced" case, upon a "permit from the local board of health to go home." Eight days after her return home she died. The premises vacated by her death were not disinfected or cleaned. The case was not reported to the board of health by the hospital authorities, but was reported by a physician previous to removal to the hospital.

*Patient No. 33.*

This patient, a man, was discharged from the hospital as a "moderately advanced" case, upon his statement that he was going to Colorado. Upon his release from the hospital he stayed in Lawrence for some months, and then left for parts unknown. The tenement premises vacated by the patient were not disinfected or cleaned. The case was reported to the local board of health by the hospital authorities.

*Patient No. 34.*

This patient, a man, was discharged from the hospital as an "arrested" case. He returned to his home, stayed there for a short time and then left for parts unknown. The tenement premises vacated by him were not cleaned or disinfected. No report of the patient was made to the board of health by the hospital authorities.

*Patient No. 35.*

This patient, a woman, was discharged from the hospital as an "advanced" case, upon her statement that she wished to live in the country. Upon investigation it was found that she had not left the city, but was living in a crowded tenement, where she had placed herself under the care of a physician. No report of the case from any source had been received by the local board of health.

*Patient No. 36.*

This patient, a young man, was discharged from the hospital as "troublesome." When seen he was found living at home under bad sanitary surroundings and in an advanced stage of tuberculosis. He had considerable cough and much expectoration. Although he had placed himself under the care of a physician, the only report of the case received by the local board of health was that from the hospital authorities.

*Patient No. 37.*

This patient, a woman, was discharged from the hospital as "apparently arrested." When seen she appeared to be well. The case was reported to the board of health by the hospital authorities.

*Patient No. 38.*

This patient, a man, was discharged from the hospital as "apparently arrested." When seen he still had considerable cough and expectoration. Although he had consulted two physicians previous to his admission to the hospital, the only report of his case received by the board of health was that submitted by the hospital authorities.

*Patient No. 39.*

This patient, a man, was discharged from the hospital as an "apparently arrested" case. Upon leaving the hospital he went to work in a local cotton mill. When seen he appeared to be in good health. Although sent to the hospital by a physician, the only report of the case to the board of health was that submitted by the hospital authorities.

*Patient No. 40.*

This patient, a man, was discharged from the hospital for "insubordination." Although in an advanced stage of the disease, with occasional hemorrhages, he was out and about on the street, expectorating promiscuously. He was an alcoholic and had no regard for his own health or that of others. The case was reported to the board of health by the hospital authorities.

*Patient No. 41.*

This patient, a woman, an "advanced" case, was discharged from the hospital on "permission from the board of health" on her promise to live in another town. She failed to keep this promise, however, and returned to Lawrence, where she died some months after her release from the hospital. The case was not reported to the board of health by the hospital authorities, but was reported by a physician previous to her admission to the hospital.

*Patient No. 42.*

This patient, a man, was discharged from the hospital as an "advanced" case. He returned to his home and died ten days after his release. The premises vacated by him were not disinfected or cleaned. The case was reported to the board of health by the hospital authorities.

*Patient No. 43.*

This patient, a woman, was discharged from the hospital as an "advanced" case, against advice. She returned to her home and placed herself under the care of a physician. Subsequently another physician was employed to care for her. The only report of her case received by the local board of health was that of the physician who first saw her after her release from the hospital.

*Patient No. 44.*

This patient, a young man, was discharged from the hospital "against advice." When seen he was found in an active stage of tuberculosis and, although under the care of a physician, was uncertain whether he had "consumption," as his physician had stated that his only trouble was "a little moisture in one of his lungs." The case was reported to the board of health by the hospital authorities, but was not reported by the physician employed by the patient on returning from the hospital.

*Patient No. 45.*

This patient, a young girl, fourteen years old, was discharged from the hospital upon "permission from the board of health," although upon her discharge she had a temperature of 103 and a pulse of 160. When seen this child was found in a terminal stage of tuberculosis, in a home in which there were several other children, all living amidst squalid surroundings. No care was taken of the expectoration of the patient in her home, and no advice had been given the patient or the family by any health official, private individual or anti-tuberculosis organization since her return from the hospital. This case had been reported to the local board of health by the hospital authorities.

## RÉSUMÉ OF THE LAWRENCE TUBERCULOSIS CASES.

Number of cases discharged as apparently arrested, . . . . .	14
Number of cases discharged as advanced cases (2 of these were discharged for drunkenness), . . . . .	13
Number discharged for drunkenness, . . . . .	2
Number discharged for other reasons, . . . . .	7
Number who ran away (1 of these was an advanced case), . . . . .	9
Number of cases discharged reported to the local board of health, . . . . .	36
Number of cases discharged not reported to the local board of health, . . . . .	9

Of the number reported 28 had been reported by the hospital authorities and 8 by physicians.

There were 9 discharged with active process subsequently seen by a physician whose case was not reported by that physician to the local board of health.

Number of cases that died after leaving hospital, . . . . .	4
Number lost sight of (including 4 intoxicants), . . . . .	16
Number found under supervision or treatment, . . . . .	10
Number found without supervision or treatment, . . . . .	10
In regard to the others:—	
Cases discharged as apparently arrested who appeared to be well, . . . . .	3
Case went to hospital for operation, . . . . .	1
Case found at home with some cough and expectoration, . . . . .	1

There were 6 patients (4 in advanced stage and 2 in arrested stage) living in crowded tenements.

## RÉSUMÉ OF ALL CASES (127) DISCHARGED FROM THE LAWRENCE TUBERCULOSIS HOSPITAL SINCE THE OPENING OF THE HOSPITAL, Nov. 1, 1910, TO APRIL 8, 1912.

An analysis of the records of the hospital shows that 75 patients, 59 per cent. of all the patients discharged, have died; that the whereabouts or present condition of 17 patients are unknown; that 6 patients have, apparently, recovered; and that one person was decided not to have had tuberculosis.

Of the remaining 28 cases now actively ill with the disease all but 4 were found living in tenements, and some amidst bad sanitary surroundings. With the exception of 2 instances especial precautions were not taken to prevent the spread of the disease.

To none of the 28 patients had advice or assistance been given by the local board of health.

Many of the patients were found out and about each day on the streets, in moving-picture houses and elsewhere, even though they were spitting promiscuously. One patient had returned to school, although having considerable cough and some expectoration and occasional hemorrhage. One patient went to work in a mill. Three of the patients had confirmed habits of intoxication.

Each of these patients, now a menace to the public health, was at one time, as has been shown, under treatment in a municipal hospital. They have been allowed in many instances to return to crowded tenements and to unsanitary homes, and no successful attempt was made by local authorities to keep track of their whereabouts.

A study of the cases discharged from the Lawrence Tuberculosis Hospital shows, therefore, that (*a*) cases of tuberculosis were not being properly reported by physicians and hospital authorities in Lawrence; (*b*) the local board of health was not exercising its authority and duty in following the cases discharged from the hospital; (*c*) there existed a lack of practical co-operation between the hospital authorities and the local board of health, and that (*d*) cases of advanced tuberculosis were allowed to continue as a menace to the public health.

The foregoing facts indicate some of the problems that must be dealt with if the spread of tuberculosis is to be checked. They indicate that the social as well as the medical aspect of the disease, must be further considered. The prevention of the spread of tuberculosis from one person to another includes among other problems those of housing, proper nutrition and personal hygiene.

As a step toward the correction of such a condition of affairs as is disclosed by the facts stated above, it would seem that there should be in certain prescribed localities within the State designated officials who should at all events have exact knowledge of the prevalence of tuberculosis within these localities,—persons who should have knowledge of the physical and social condition of each patient entering a State sanatorium, together with a knowledge of their condition during their stay in hospitals and at the time of discharge. These officials should also have general oversight of the sanitary and other conditions affecting all persons ill with tuberculosis within their respective localities.

At the present time the duties of the State Inspectors of Health relating to tuberculosis may be stated briefly as follows:—

1. To gather all information possible concerning its prevalence.
2. To disseminate knowledge as to the best methods of preventing its spread.

3. To report to the State Board of Health any minor employed in a factory who is found to have the disease.
4. To report to the State Board of Health and to the proper local health authority every case discovered in a tenement workshop.
5. To notify local boards of health of any person found to be endangering the public health.
6. To do what they can toward seeing that the notification laws which require householders and physicians to report any known case to local health authorities are enforced.
7. To aid the State Board of Health in the enforcement of the laws relating to the maintenance of isolation hospitals, tuberculosis hospitals and wards by cities and towns, and to the maintenance of tuberculosis dispensaries by cities and towns of 10,000 inhabitants or over.

#### **A STATEMENT MADE BY THE SECRETARY OF THE TRUSTEES OF HOSPITALS FOR CONSUMPTIVES.**

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The Board of Trustees of Hospitals for Consumptives has realized from the start that in order to make the results obtained at the State sanatoria permanent and effective, it was necessary to establish some sort of a system by means of which patients discharged from the State sanatoria, in whatsoever stage of the disease, could be kept under supervision, and, if necessary, under treatment in their homes. In order to obtain this co-operation, therefore, between the State sanatoria, on the one hand, and the local tuberculosis agencies,—whether local boards of health, tuberculosis associations or State health inspectors,—on the other, a system was put into operation at the beginning aimed to bring this about.

As soon as any patient is admitted to one of the State sanatoria the local board of health of the town or city from which this patient comes is at once notified, so that steps can be taken to clean up and fumigate the rooms in which he lived, and if necessary to look after the other members of the family who may need aid. In a similar way, on the discharge of any patient the local tuberculosis society or district nursing association, etc., as well as the State Inspector of Health of that district, is notified, in order that on the patient's return he may be under supervision, given suggestions as to how to carry on the treatment at home, or, if the disease is in an advanced or progressive stage, so that he may be cared for in a local hospital.

The Board hopes that as soon as dispensaries are established in each

city or town of over 10,000 inhabitants, which is now required by the law, this system of co-operation and interchange of information in regard to patients, whether to be admitted or discharged from the State institutions, can be carried on still further.

#### REGULATIONS CONCERNING THE PROVIDING OF A COMMON TOWEL.

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In accordance with the provisions of chapter 59, Acts of 1912, the State Board of Health, at a regular meeting held April 4, 1912, voted to make the following regulations in relation to providing the common towel:—

On and after June 1, 1912, it shall be unlawful to provide a common towel:—

(a) In any building used as a public institution, hotel, restaurant, theatre, public hall or public school; or

(b) In any railroad station, railroad car, steam or ferry boat.

The term "common towel," as used in these regulations, shall be considered to mean a roller towel or a towel available for use by more than one person without being washed after such use.

New Series.

APRIL, 1912.

VOL. 7. NO. 4.

# MONTHLY BULLETIN



OF THE  
STATE BOARD OF HEALTH  
OF  
MASSACHUSETTS.

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1912.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING APRIL 6, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or n.o.t. classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mumps.
Boston, .	686,092	236	43	78	40	17					4
Worcester, .	145,986	48	9	16	7	5					1
Fall River, .	119,295	41	11	16	9	3					
Lowell, .	106,294	39	11	12	4	1					
Cambridge, .	104,839	22	7	5	3	4					
New Bedford, .	96,652	30	8	10	5	4					
Lynn, .	89,336	31	3	9	3	3					
Springfield, .	88,926	26	10	10	9	9					
Lawrence, .	85,892	23	6	8	4	4					
Somerville, .	77,236	23	5	5	4	4					
Holyoke, .	57,730	16	3	3	2	2					
Brockton, .	56,878	15	8	7	3	3					
Malden, .	44,404	6	1	2	1	1					
Haverhill, .	44,115	17	6	10	8	1					
Salem, .	43,697	12	1	2	1	1					
Newton, .	39,806	8	1	3	3	3					
Fitchburg, .	37,826	15	7	6	4	4					
Taunton, .	34,259	18	8	10	6	6					
Everett, .	33,484	8	2	2	2	2					
Quincy, .	32,642	4	2	1	1	1					
Chelsea, .	32,452	9	1	2	1	1					
Pittsfield, .	32,121	7	—	3	3	3					
Waltham, .	27,834	4	1	1	1	1					
Brookline, .	27,792	5	1	1	1	1					
Chicopee, .	25,401	11	4	4	2	2					
Gloucester, .	24,398	10	1	3	1	1					1
Medford, .	23,150	6	1	2	2	2					
North Adams, .	22,019	4	1	1	1	1					
Northampton, .	19,431	9	2	2	1	1					
Beverly, .	18,650	2	1	1	1	1					
Revere, .	18,219	5	1	1	1	1					
Leominster, .	17,580	33	—	—	—	—					
Attleborough, .	16,215	5	—	—	—	—					
Westfield, .	16,044	33	—	—	—	—					
Peabody, .	15,721	2	1	1	1	1					
Melrose, .	15,715	5	—	—	—	—					
Woburn, .	15,308	3	2	—	—	—					
Newburyport, .	14,949	5	1	—	—	—					
Gardner, .	14,699	3	2	—	—	—					
Marlborough, .	14,579	2	1	—	—	—					
Clinton, .	13,075	6	1	1	1	1					
Milford, .	13,055	—	—	—	—	—					
Adams, .	13,026	0	—	—	—	—					
Framingham, .	12,948	1	—	—	—	—					
Weymouth, .	12,895	—	—	—	—	—					
Watertown, .	12,875	2	0	1	1	1					
Southbridge, .	12,592	5	2	1	1	1					
Plymouth, .	12,141	6	3	1	1	1					1
Webster, .	11,509	2	0	1	1	1					
Methuen, .	11,448	1	1	1	—	1					
Wakefield, .	11,404	3	1	2	—	—					
Arlington, .	11,187	88	1	2	—	—					
Greenfield, .	10,427	5	—	—	—	—					
Winthrop, .	10,132	5	1	—	—	—					

*Recapitulation.*

Total of reporting towns, .	2,580,430	785	183	246	132	55	9	4	1	4	4	6
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WEEK ENDING APRIL 13, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	DEATHS FROM —																					
		Reported Deaths in Each.	Deaths under Five Years.			Principal In- fectious Dis- eases.			Acute Lung Diseases.			Tuberculosis, Pulmonary (or not classified).			Tuberculosis, other than Pulmonary.			Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	
			Deaths	under	Five	Years.	5	10	12	13	19	7	10	12	13	19	6	4	24	4	1	1	4
Boston, .	686,092	242	58				95	45	24									4	3				4
Worcester, .	145,986	49	12				18	10	4									2					1
Fall River, .	119,295	39	14				12	7	3									1					1
Lowell, .	106,294	32	7				10	4	4									1					
Cambridge, .	104,839	31	5				13	6	5									1					
New Bedford, .	96,652	38	17				19	5	6									1					
Lynn, .	89,336	29	5				7		1									1					
Springfield, .	88,926	24	7				10		2									1					
Lawrence, .	85,892	23	11				12		3									1					
Somerville, .	77,236	17	6				3		2									1					
Holyoke, .	57,730	19	9				8		4									1					
Brockton, .	56,878	15	5				6		3									1					
Malden, .	44,404	11	5				4		2									1					
Haverhill, .	44,115	15	3				5		2									1					
Salem, .	43,697	4	—				—		—									—					
Newton, .	39,806	8	2				3		1									—					
Fitchburg, .	37,826	6	2				—		—									—					
Taunton, .	34,259	15	6				8		5									—					
Everett, .	33,484	7	2				2		1									—					
Quincy, .	32,642	11	2				4		2									—					
Chelsea, .	32,452	10	3				1		1									—					
Pittsfield, .	32,121	13	1				3		1								—						
Waltham, .	27,834	9	2				4		2								—						
Brookline, .	27,792	7	1				1		1								—						
Chicopee, .	25,401	7	3				2		—								—						
Gloucester, .	24,398	8	2				—		—								—						
Medford, .	23,150	10	—				4		2								2						
North Adams, .	22,019	8	1				1		1								1						
Northampton, .	19,431	7	3				1		2								—						
Beverly, .	18,650	10	1				2		—								1						
Revere, .	18,219	5	—				—		—								2						
Leominster, .	17,580	3	—				—		—								1						
Attleborough, .	16,215	4	0				1		—								—						
Westfield, .	16,044	5	1				3		1								2						
Peabody, .	15,721	4	—				2		—								1						
Melrose, .	15,715	2	—				1		1								—						
Woburn, .	15,308	3	0				—		—								—						
Newburyport, .	14,949	7	—				3		1								2						
Gardner, .	14,699	5	1				1		—								—		1				
Marlborough, .	14,579	6	2				—		—								—		—				
Clinton, .	13,075	3	1				—		—								—		—				
Milford, .	13,055	—	—				—		—								—		—				
Adams, .	13,026	2	1				—		—								—		—				
Framingham, .	12,948	3	0				1		1								—		—				
Weymouth, .	12,895	—	—				—		—								—		—				
Watertown, .	12,875	3	0				2		1								1		—				
Southbridge, .	12,592	5	4				—		—								—		—				
Plymouth, .	12,141	7	4				2		1								—		—				
Webster, .	11,509	3	1				2		1								1		—				
Methuen, .	11,448	1	—				—		—								—		—				
Wakefield, .	11,404	3	2				—		—								—		—				
Arlington, .	11,187	3	1				—		—								—		—				
Greenfield, .	10,427	3	1				—		—								—		—				
Winthrop, .	10,132	1	—				1		1								—		—				

## Recapitulation.

Total of report- ing towns, .	2,580,430	805	214	280	137	77	10	8	2	4	9	7
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WEEK ENDING APRIL 20, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	259	66	86	40	26	-	-	-	-	4
Worcester, .	145,986	40	9	13	9	1	-	-	-	-	1
Fall River, .	119,295	37	15	13	4	2	-	-	-	-	-
Lowell, .	106,294	40	13	11	6	2	-	-	-	-	-
Cambridge, .	104,839	28	10	13	6	3	-	-	-	-	-
New Bedford, .	96,652	35	10	9	6	2	-	-	-	-	-
Lynn, .	89,336	22	5	4	1	1	-	-	-	-	-
Springfield, .	88,926	36	6	7	2	3	-	-	-	-	-
Lawrence, .	85,892	28	8	15	3	6	-	-	-	-	-
Somerville, .	77,236	16	5	4	2	2	-	-	-	-	-
Holyoke, .	57,730	19	7	9	6	2	-	-	-	-	-
Brockton, .	56,878	18	7	6	3	1	-	-	-	-	-
Malden, .	44,404	10	3	4	1	2	-	-	-	-	-
Haverhill, .	44,115	15	3	9	2	1	-	-	-	-	-
Salem, .	43,697	12	2	2	1	1	-	-	-	-	-
Newton, .	39,806	13	2	2	2	-	-	-	-	-	-
Fitchburg, .	37,826	14	1	-	-	-	-	-	-	-	-
Taunton, .	34,259	15	4	7	3	1	-	-	-	-	-
Everett, .	33,484	7	-	1	-	1	-	-	-	-	-
Quincy, .	32,642	4	-	2	1	2	-	-	-	-	-
Chelsea, .	32,452	12	2	2	2	2	-	-	-	-	-
Pittsfield, .	32,121	6	1	1	1	1	-	-	-	-	-
Waltham, .	27,834	6	1	1	1	1	-	-	-	-	-
Brookline, .	27,792	10	-	1	1	1	-	-	-	-	-
Chicopee, .	25,401	10	5	7	5	1	-	-	-	-	-
Gloucester, .	24,398	4	-	-	-	-	-	-	-	-	-
Medford, .	23,150	3	-	1	1	1	-	-	-	-	-
North Adams, .	22,019	5	-	1	1	1	-	-	-	-	-
Northampton, .	19,431	6	2	1	1	1	-	-	-	-	-
Beverly, .	18,650	4	-	-	-	-	-	-	-	-	-
Revere, .	18,219	5	-	1	1	1	-	-	-	-	-
Leominster, .	17,580	1	-	-	-	-	-	-	-	-	-
Attleborough, .	16,215	7	1	1	1	1	-	-	-	-	-
Westfield, .	16,044	9	3	2	2	2	-	-	-	-	-
Peabody, .	15,721	6	-	-	-	-	-	-	-	-	-
Melrose, .	15,715	0	-	-	-	-	-	-	-	-	-
Woburn, .	15,308	2	1	1	1	1	-	-	-	-	-
Newburyport, .	14,949	4	1	2	1	1	-	-	-	-	-
Gardner, .	14,699	6	-	3	-	1	-	-	-	-	-
Marlborough, .	14,579	3	1	1	-	-	-	-	-	-	-
Clinton, .	13,075	4	-	-	-	-	-	-	-	-	-
Milford, .	13,055	-	-	-	-	-	-	-	-	-	-
Adams, .	13,026	2	0	-	-	-	-	-	-	-	-
Framingham, .	12,948	-	-	-	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	2	0	-	-	-	-	-	-	-	-
Southbridge, .	12,592	4	2	-	-	-	-	-	-	-	-
Plymouth, .	12,141	4	0	1	1	1	-	-	-	-	-
Webster, .	11,509	2	1	1	1	1	-	-	-	-	-
Methuen, .	11,448	1	1	-	-	-	-	-	-	-	-
Wakefield, .	11,404	3	1	-	-	-	-	-	-	-	-
Arlington, .	11,187	-	-	-	-	-	-	-	-	-	-
Greenfield, .	10,427	5	0	1	-	-	-	-	-	-	-
Winthrop, .	10,132	6	1	3	-	1	2	-	-	-	-

## Recapitulation.

Total of reporting towns, .	2,567,482	815	202	251	114	67	10	3	3	4	6	5
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WEEK ENDING APRIL 27, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	232	52	85	35	25	4	2	1	-	-	2
Worcester, .	145,986	47	8	18	8	4	3	-	1	1	1	3
Fall River, .	119,295	38	10	16	5	7	3	-	1	-	-	1
Lowell, .	106,294	45	14	18	6	8	2	-	1	-	-	-
Cambridge, .	104,839	26	5	7	3	1	1	-	1	-	-	-
New Bedford, .	96,652	34	10	5	3	2	1	-	1	-	-	-
Lynn, .	89,336	17	5	6	3	1	1	-	1	-	-	-
Springfield, .	88,926	16	1	5	2	2	1	-	1	-	-	-
Lawrence, .	85,892	26	6	3	6	6	1	-	1	-	-	-
Somerville, .	77,236	19	2	3	1	1	1	-	1	-	-	-
Holyoke, .	57,730	17	10	9	7	1	1	-	1	-	-	-
Brockton, .	56,878	13	1	1	1	-	-	-	-	-	-	-
Malden, .	44,404	6	1	3	2	-	-	-	-	-	-	-
Haverhill, .	44,115	11	5	3	2	-	-	-	-	-	-	-
Salem, .	43,697	14	4	2	1	-	-	-	-	-	-	-
Newton, .	39,806	11	1	1	1	-	-	-	-	-	-	-
Fitchburg, .	37,826	8	4	1	1	-	-	-	-	-	-	-
Taunton, .	34,259	17	4	7	4	3	1	-	1	-	-	-
Everett, .	33,484	4	1	1	1	-	-	-	-	-	-	-
Quincy, .	32,642	7	-	4	1	-	-	-	-	-	-	-
Chelsea, .	32,452	10	6	5	3	-	-	-	-	-	-	-
Pittsfield, .	32,121	13	1	4	3	-	-	-	-	-	-	-
Waltham, .	27,834	5	1	2	1	-	-	-	-	-	-	-
Brookline, .	27,792	4	-	3	2	-	-	-	-	-	-	-
Chicopee, .	25,401	8	4	3	2	-	-	-	-	-	-	-
Gloucester, .	24,398	4	1	1	1	-	-	-	-	-	-	-
Medford, .	23,150	6	3	2	1	-	-	-	-	-	-	-
North Adams, .	22,019	9	4	1	1	-	-	-	-	-	-	-
Northampton, .	19,431	5	2	2	1	-	-	-	-	-	-	1
Beverly, .	18,650	8	-	1	1	-	-	-	-	-	-	-
Revere, .	18,219	3	1	1	1	-	-	-	-	-	-	-
Leominster, .	17,580	4	1	1	1	-	-	-	-	-	-	-
Attleborough, .	16,215	2	1	1	1	-	-	-	-	-	-	-
Westfield, .	16,044	7	2	4	1	-	-	-	-	-	-	-
Peabody, .	15,721	3	2	1	1	-	-	-	-	-	-	-
Melrose, .	15,715	3	-	1	1	-	-	-	-	-	-	-
Woburn, .	15,308	6	0	2	1	-	-	-	-	-	-	-
Newburyport, .	14,949	7	-	2	1	-	-	-	-	-	-	-
Gardner, .	14,699	9	3	4	1	-	-	-	-	-	-	-
Marlborough, .	14,579	9	2	4	4	-	-	-	-	-	-	-
Clinton, .	13,075	3	-	1	1	-	-	-	-	-	-	-
Milford, .	13,055	-	-	-	-	-	-	-	-	-	-	-
Adams, .	13,026	2	0	1	1	-	-	-	-	-	-	-
Framingham, .	12,948	4	1	1	1	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	2	0	-	-	-	-	-	-	-	-	-
Southbridge, .	12,592	3	1	-	-	-	-	-	-	-	-	-
Plymouth, .	12,141	2	1	1	2	-	-	-	-	-	-	-
Webster, .	11,509	4	2	2	1	-	-	-	-	-	-	-
Methuen, .	11,448	4	2	-	-	-	-	-	-	-	-	-
Wakefield, .	11,404	4	1	-	-	-	-	-	-	-	-	-
Arlington, .	11,187	1	-	-	-	-	-	-	-	-	-	-
Greenfield, .	10,427	1	-	-	-	-	-	-	-	-	-	-
Winthrop, .	10,132	2	-	2	2	-	-	-	-	-	-	-

## Recapitulation.

Total of reporting towns, .	2,580,430	765	186	244	110	74	14	5	7	-	9	3
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF APRIL 6, 13, 20 AND 27, 1912.**

DISEASE.	Place.	WEEK ENDING -			
		Apr. 6.	Apr. 13.	Apr. 20.	Apr. 27.
Cerebro-spinal meningitis.	Boston, . . . Worcester, . . . Fall River, . . . Springfield, . . . Haverhill, . . .	1 1 1 - -	1 - - - 1	1 - - 1 4	1 - - - 1
Erysipelas, . . .	Boston, . . . Worcester, . . . Fall River, . . . Lowell, . . . Lynn, . . . Haverhill, . . . Taunton, . . . Peabody, . . . Gardner, . . .	- 1 - - 1 1 - - -	2 1 - - - - 1 - -	1 1 - 1 - - 1 - -	1 - 1 - - - - - -
Influenza, . . .	Boston, . . . Lynn, . . . Waltham, . . .	4 1 1	- - 1	- - -	2 - -
Puerperal fever,	Boston, . . . Fall River, . . . Cambridge, . . . Lawrence, . . . Malden, . . . Taunton, . . .	2 1 1 - 1 1	1 - - - - -	2 - - 1 - -	2 - - - - -
Diarrhoeal diseases, .	Boston, . . . Fall River, . . . Cambridge, . . . New Bedford, . . . Lawrence, . . . Springfield, . . . Holyoke, . . . Malden, . . . Haverhill, . . . Taunton, . . . Brockton, . . . Chicopee, . . . Northampton, . . . Plymouth, . . .	4 2 - 1 2 - 1 - - 1 - - - - -	5 2 - 3 1 1 2 1 - 1 - - - - 1	7 5 2 1 2 1 1 - 1 1 1 - - - -	9 1 - - - - - - - - - - - - - -
Meningitis (other than cerebro-spinal).	Malden, . . . Everett, . . .	1 -	- -	- -	- 1
Anterior poliomyelitis,	Boston, . . .	1	-	1	1

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
APRIL 6, 13, 20, and 27, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —				
	Apr. 6.	Apr. 13.	Apr. 20.	Apr. 27.	Total.
Diphtheria, . . . . .	70	95	66	98	329
Measles, . . . . .	655	833	711	942	3,141
Scarlet fever, . . . . .	131	152	95	100	478
Typhoid fever, . . . . .	20	24	24	19	87
Tuberculosis, pulmonary, (or not classified)	155	200	180	184	719
Tuberculosis, other than pulmonary, . . . . .	17	8	16	15	56
Cerebro-spinal meningitis, . . . . .	9	6	6	13	34
Meningitis, other than Cerebro-spinal, . . . . .	-	1	2	1	4
Whooping cough, . . . . .	77	73	53	70	273
Varicella, . . . . .	57	96	64	88	305
Ophthalmia neonatorum, . . . . .	29	36	24	40	129
Anterior poliomyelitis, . . . . .	-	2	1	-	3
Mumps, <sup>1</sup> . . . . .	10	8	13	14	45
Smallpox, . . . . .	38	23	27	9	97
Trachoma, . . . . .	-	-	2	1	3
Erysipelas, <sup>1</sup> . . . . .	1	1	-	-	2
Malaria . . . . .	1	-	-	-	1
Anthrax, . . . . .	-	1	-	1	2
Tetanus . . . . .	-	-	1	1	2

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of April, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total
Baking powder, .	1	—	1	Meat products:—			
Bread, . . .	1	—	1	Canned meats, .	1	—	1
Cheese, . . .	3	—	3	Jellied meats, .	2	—	2
Condensed milk, .	2	—	2	Sausages, . . .	—	2	2
Confectionery, .	3	2	5	Milk, . . .	283	96	379
Cream, . . .	3	—	3	Molasses, . . .	1	—	1
Cream of tartar	1	—	1	Non-alcoholic drinks, . . .	1	—	1
Drugs, . . .	64	16	80	Olive oil, . . .	7	—	7
Flavoring extracts:—				Pickles, . . .	2	—	2
Lemon, . . .	3	—	3	Salad dressing, . . .	1	—	1
Vanilla, . . .	3	—	3	Salad oil, . . .	1	—	1
Grape juice, . .	2	—	2	Shrimp, . . .	1	1	2
Horse radish, .	1	—	1	Spices, . . .	8	—	8
Jams and jellies, .	16	—	16	Table sauces, . . .	3	2	5
Lard, . . .	1	—	1	Vinegar, . . .	5	6	11
Maple sugar, . .	4	—	4	Wine, . . .	6	13	19
Maple syrup, . .	2	—	2	Total, . . .	432	138	570

The samples of drugs found to be adulterated were alcohol, spirit of anise, spirit of camphor, spirit of nitrous ether, spirit of peppermint and tincture of iodine, and proprietary medicines.

The cities and towns in which samples were collected were: Attleborough, Belmont, Boston, Burlington, Cambridge, Chelsea, Everett, Fall River, Fitchburg, Hingham, Lawrence, Littleton, Lynn, Malden, Medford, Millbury, Milton, New Bedford, Newburyport, Newton, North Adams, North Attleborough, Peabody, Plymouth, Quincy, Reading, Salem, Saugus, Somerville, Springfield, Taunton, Watertown, Westboro, West Springfield, Williamstown, Woburn.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Four convictions were secured during the month of April, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	F. W. Woolworth & Co. . .	Boston, . . .	Confectionery (contained sulphur dioxide).
2	Joseph Eisenberg . . .	Boston, . . .	Eggs (broken out, decomposed).
3	Patrick P. Dobbins . . .	Woburn . . .	Milk (total solids, 11.45) <sup>1</sup> .
4	Nathan H. Marion . . .	Woburn . . .	Milk (total solids 11.72) <sup>1, 2</sup> .

<sup>1</sup> Watered.

<sup>2</sup>Appealed.

Fines imposed, \$150.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR APRIL, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.	
9611 R	Armour's Tomato Bouillon.	Armour & Co., Chicago, Ill., . . . . .	Preserved with a compound of salicylic acid.	
16863	Essence of anise, .	Dorchester Pharmaeuy, P. Weiner, Dorchester, Mass., . . . . .	11.0 per cent. U. S. P. strength.	
q 8712	Spirit of camphor, .	John A. Rice, North Adams, Mass., . . . . .	70 per cent. U. S. P. strength.	
q 8711	Spirit of peppermint	John A. Rice, North Adams, Mass., . . . . .	22 per cent. U. S. P. strength.	
16902	Aratum, .	Dr. Jan Chmielewski, Somerville, Mass., . . . . .	Contains 11.52 per cent. alcohol by volume; no statement as to the presence of alcohol.	
16904	Krople Mietowe, .	Dr. Jan Chmielewski, Somerville, Mass., . . . . .	Contains 65.32 per cent. alcohol by volume; no statement as to the presence of alcohol.	
	Prof. Woods Comp. Ext. Sarsaparilla.	Sodergren Bros., Minneapolis, Minn., . . . . .	Contains 19.39 per cent. alcohol by volume; no statement as to the presence of alcohol.	
q 8705	Milk, . . . . .	{ F. F. O'Riley, Wollaston, Mass., . . . . . Joseph J. Morley, Wollaston, Mass., . . . . . C. H. Backus, Wollaston, Mass., . . . . . William Keyes, . . . . .	Total solids 10.60 per cent.; fat 1.85 per cent.; proteins, 3.12 per cent. skinned milk.	
q 8706	Milk, . . . . .	Josiah W. Beekford, Plymouth, Mass., . . . . .	Total solids, 8.80 per cent.; fat, 2.10 per cent. contained added water.	
1526 O	Milk, . . . . .	Owen N. Johnson, North Attleborough, Mass., . . . . .	Total solids 11.30 per cent.; fat, 3.50 per cent. contained added water.	
q 8790	Milk, . . . . .	Jacob Frankel, New Bedford, Mass., . . . . .	Total solids 11.16 per cent.; fat, 3.70 per cent. contained added water.	
17018	Milk, . . . . .		Total solids, 9.90 per cent.; fat, 2.10 per cent. contained added water.	

## INSPECTION OF DAIRIES.

During the month of April, 1912, 153 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Cohasset, . . .	3	2	66.67	1	33.33
Third inspection, . . .	2	2	100.00	—	—
Everett, . . .	14	13	92.86	1	7.14
Second inspection, . . .	3	3	100.00	—	—
Third inspection, . . .	5	5	100.00	—	—
Fourth inspection, . . .	1	1	100.00	—	—
Hingham, . . .	19	17	89.47	2	10.53
Third inspection, . . .	3	3	100.00	—	—
Fourth inspection, . . .	1	1	100.00	—	—
Lynn, . . .	12	8	66.67	4	33.33
Second inspection, . . .	3	3	100.00	—	—
Third inspection, . . .	6	4	66.67	2	33.33
Nahant, . . .	1	1	100.00	—	—
Third inspection, . . .	1	—	—	1	100.00
Quincy, . . .	8	6	75.00	2	25.00
Second inspection, . . .	10	9	90.00	1	10.00
Third inspection, . . .	20	14	70.00	6	30.00
Revere, . . .	4	3	75.00	1	25.00
Second inspection, . . .	1	1	100.00	—	—
Third inspection, . . .	4	3	75.00	1	25.00
Scituate, . . .	1	—	—	1	100.00
Second inspection, . . .	6	5	83.33	1	16.67
Third inspection, . . .	2	1	50.00	1	50.00
Fourth inspection, . . .	1	1	100.00	—	—
Williamstown, . . .	18	16	88.89	2	11.11
Second inspection, . . .	4	3	75.00	1	25.00

Total number of dairies examined, . . . . . 153  
 Number found to be free from objectionable conditions, . . . . . 125  
 Number concerning which letters were sent, . . . . . 28  
 Total number of conditions to which attention was called, . . . . . 65  
 Percentage of dairies which passed inspection, . . . . . 81.70

Included in the total number of dairies visited were 80 which had recently started in the milk-producing business and were inspected for the first time.

In addition to the above, 24 dairies were visited at which the sale of milk had been discontinued.

In the towns of Florida, Leyden and Munroe it was found that no milk was being produced.

The names of the owners of the dairies found to be worthy of commendation follow:—

## COHASSET.

*Class A.*

*Class B.*

Bryant, Dr. W. S. Pratt, S. E.:

EVERETT.

*Class A.*

Cannell, Joseph H. 1875- Leavitt, Thomas F.

*Class B.*

Allen, Bert	Hamilton, George G. †	Rosgrove, H.
Corkery, James* †	Harley, James	Stewart, David
Coulter, T. E.	Harvie, A.	Stone, Mayer* †
Freeman, Mrs. Annie A. ‡	Kelley, J. B.	Tholen, Herman H. *
Ferris & Gustafson	Lingard, James	True, E. L.
Gage, Henry S. † ‡	McNally, James‡	Young, F. F.
Halpin, Jeremiah	Peterson, John A. §	

## HINGHAM.

*Class A.*

Fearing, Walter B.

*Class B.*

Bass, Lewis	Fottler, Joseph A.	Shultz, Ernest C.
Billings, Arthur	Hobart Arthur C.	Wilder, Edward F.
Codman, William C.	Jordan, Henry G. † §	Wilson, George
Damstre, Sytse † §	King, J. S. & G. W.	Winquist, Carl G.
Damstre, Ynte	McKenna, William H.	Winquist, Otto J.
Fearing, Charles R.	Salomaa, Salin	Young, C. M. † §
Foley, Cornelius §	Shirmer Brothers	

LINN.

*Class A.*

## "Lynn City Home":

*Class B.*

Charles, Charles A.	Graham, John H.*†	Polonius, Martin*†
Coates, Rose M.	Harmon, G. W.	Starratt, Joseph A.
Dearborn, Fred D.	Nicholson, John	Waitt, L. Alden‡§
Furbush, Mrs. Lillian A.‡	Nickerson, A. W.	Weaver, Mrs. Florence
Graham, Fred J.*	Phillips, Est. of Augustus O.‡	

## NAHANT.

*Class B.*

Kibbe, George

\* Second inspection.

† Reported favorably on first inspection.

Reported invasion  
Fourth inspection.

### **Third inspection.**

Reported favorably on all previous inspections.

## QUINCY.

## Class A.

Fearing, W. B. ‡ §

## Class B.

Bowen, F. L.* †	Kiley, Stephen	Patten, G. W.* †
Brown, Mary J.* †	Lord, Mrs. Mary R. ‡	Peltó, Aena
Delory, John M.*	Lund, John ‡	Svard, Edla
Garrity, Lawrence P. ‡	McConarty, Peter	Taylor, Mrs. S. F. ‡ §
Goucher, C. A. ‡	McCormick, Francis ‡	Vincent, Augustus ‡
Griffiths, John I.	Montani, Louis*	White, A. ‡
Hunter, Clarence ‡ §	Moorehead, James ‡	Wight, Gilbert M.
Hyvonen, John*	"National Sailors Home" ‡ §	Zavattonni, Stephano*
Johnson, Charles G.* †	Nelson, Charles *	
Kennard, H. G. ‡	Nowland, J. M. ‡ §	

## REVERE.

## Class B.

Brown, Allen J. ‡	Clark, Patrick ‡	Flynn, Edward
Burnes, Patrick	Coughlan, Thomas	Melia, James ‡

## SCITUATE.

## Class A.

Thomas W. Lawson Farm Company. || §

## Class B.

Andrews, Charles F.* †	Fisher, Mrs. Ellen A.* †	Merritt, Mrs. Henrietta* †
Finnie, Charles G. ‡	Jackson, Henry F.* †	Perkins, Charles E.* †

## WILLIAMSTOWN.

## Class A.

Blagden, Samuel	Northrop, John	Prindle, John
Bol, L.	Prindle, George H.* †	.
<i>Class B.</i>		
Briggs, Fred	Hickox, L. S.	Phelps, Henry
Forster, Clayton	Ingalls, C. D.	Ruether, A.
Galusha, D. J.	Ingalls, Charles E.*	Swain, Frank
Galusha, Lyman	Jenks, L. P.	Thompson, David P.* †
Gordon, George	Lamb, Louis G.	

## PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE AT RETAIL IN APRIL, 1912.

Aratum. Lekarstwo Na Ostry Kaszel. Dr. Jan Chmielnicki, Ch., Somerville Mass. (Incorrect statement as to the percentage of alcohol.)

Krople Mietowe. Dr. J. Chmielnicki, Ch., Somerville, Mass. (No statement as to the presence of alcohol.)

\* Second inspection.

† Reported favorably on first inspection.

|| Fourth inspection,

‡ Third inspection.

§ Reported favorably on all previous inspections.

## RECENT CONTRIBUTIONS TO OUR KNOWLEDGE CONCERNING INFANTILE PARALYSIS,<sup>1</sup>

BY MARK W. RICHARDSON, M.D., SECRETARY, STATE BOARD OF HEALTH OF MASSACHUSETTS,  
BOSTON, MASS.

It is not the purpose of this paper to give a detailed account of the disease known as infantile paralysis or anterior poliomyelitis. Its scope will be restricted rather to a short discussion of the more important contributions which have been made to our knowledge of the disease during the past year. These contributions have not been, to be sure, of an epoch-making character, but they indicate distinct progress and emphasize certain lines of investigation as worthy of further attention.

Perhaps the most unusual finding was that of Neustaedter and Thro, who were able to produce what they considered typical poliomyelitis in monkeys by inoculation of these animals with emulsions of dust taken from the rooms of patients sick with the human disease. They were able, furthermore, apparently to transfer this experimental poliomyelitis to a second series of monkeys. Neustaedter and Thro believe, therefore, that infantile paralysis is propagated by dust, and that the nasopharynx is the point of entry for the virus.

On the other hand, Rosenau, Sheppard and Amoss, and also Strauss, have not been able to demonstrate any infectious power in the secretions of mouth and nose taken from poliomyelitis patients, even though the virus has been shown by Flexner, and also by Osgood and Lucas, to persist for several months at least in the nasal mucous membranes of human beings and monkeys. The final estimation as to the value of Neustaedter and Thro's dust experiments must await confirmatory investigation.

The possible rôle of animals in the spread of infantile paralysis has always been of interest, for paralysis in animals and fowls of various species, such as the horse, cow, sheep, pig, dog, cat, hen, duck, etc., has been seen many times occasionally in intimate association with human cases of paralysis. Proof continues to be lacking, however, that there is any etiological connection between the human and animal affections. Prof. Theobald Smith has inoculated monkeys intracerebrally with filtered emulsions of 12 such animal spinal cords, in every instance with negative results. A similar filtered emulsion from a human case proved positive.

Recent work of Flexner has shown that unfiltered material is much

<sup>1</sup> Read before the American Public Health Association, Havana, Cuba, December, 1911.

more dependable in these experiments, and it is possible that further inoculations with unfiltered emulsions of animal cords may give more positive information.

In this connection an interesting report is that of Römer, who has observed a spontaneous paralysis in guinea pigs, due to a virus which is filtrable and in many ways resembles the virus of human anterior poliomyelitis.

That human anterior poliomyelitis can be transmitted to rabbits has been maintained for some time by Krauss and Meinicke, but most other observers have doubted this statement. In relation to this disputed point the results of Marks at the Rockefeller Institute are of especial interest.

Marks found that rabbits inoculated in the usual manner with poliomyelitis material became sick and died, and that the fatal affection could be transferred from rabbit to rabbit. The disease in rabbits, however, did not resemble human infantile paralysis either clinically or pathologically, but Marks was able to show that when the rabbit virus was reintroduced into monkeys it once more produced a typical paralysis.

The suggestion is, of course, that animals may be the unsuspected hosts of powerful viruses which unfold their paralytic characters only when introduced into human beings.

In this connection it is of interest to note that Massachusetts statistics for each of four consecutive years have shown that infantile paralysis is approximately ten times as prevalent in the country as in the city. As would be expected, furthermore, country children have been shown by figures to be many times more subject to contact with animals of various kinds than city children.

The presence of animals means, necessarily, the presence of a host of biting flies and other insects, and an investigation by the State Board of Health of Massachusetts during the past summer showed in every one of 88 cases of infantile paralysis the presence near the house, on the house, within the house, and sometimes even in the sick room itself, of the ordinary biting stable fly, *stomoxys calcitrans*. This fly is, I understand, closely related to the tse-tse fly, already proved to be the carrier of disease. Whether *stomoxys calcitrans* can carry the infection of anterior poliomyelitis either directly or through some intermediate form developed within its body remains to be proved. Experiments looking towards that result are now in progress.

In harmony with such a theory of transfer would be the fact that anterior poliomyelitis has seemed to have an affinity for railroads and high roads. Many animals, healthy and diseased, together with their biting parasites, are passing constantly over the railroads, and high roads. Two

patients in Massachusetts were young trainmen. Infective flies might, furthermore, follow horses or other animals, or even human beings, for long distances, and cause secondary infection far from the original focus. In this way might be explained many apparently sporadic cases, or even cases transferred apparently through the mediation of third persons. The true incidence of the disease coincides, moreover, with that for the greatest prevalence of insect life.

Hard to reconcile with such a theory, however, are the winter cases. Cannot their cases be explained by the assumption of a prolonged incubation period? Anterior poliomyelitis has many points of resemblance to rabies. May it not, like rabies, in certain instances, have an incubation period lasting weeks, or even months?

While it is true that an attack of poliomyelitis confers a large degree of immunity, it seems to be equally true that second attacks do occur. Thus such cases have been observed in Massachusetts, the interval varying from one to sixteen years. In the period between attacks is it not possible that the affected individual becomes a carrier of the specific virus?

In one case we have noted the occurrence in the same individual of anterior poliomyelitis and herpes zoster. Have not these two affections the same pathological basis?

Strauss, in a description of the pathology of anterior poliomyelitis, states "the posterior root fibers and the arachnoid membrane covering the spinal ganglia are likewise infiltrated. This infiltration and that of the pia, together with the inflammation which is present in the spinal ganglia themselves are the factors which cause the irritative symptoms, such as hyperesthesia of various portions of the body, rigidity of the neck, the pain caused by movement of the joints, all of which are present in the early stages of the disease in its epidemic form." Strauss does not, however, mention herpes zoster as a possible complication of poliomyelitis.

It seems from the literature, however, that herpes zoster has for many years been classed with the eruptive fevers. It has seemed to be followed by a definite immunity. It has been known to occur in epidemics, and these epidemics have favored the spring and summer months. It has seemed at times to be contagious, and it has been followed by paralysis of various muscles. The inference is strong that herpes zoster is due to the same virus as anterior poliomyelitis, but that it represents a different localization of the specific organism.

In one small, sharply localized focus in Massachusetts a case of zoster occurred in the summer of 1905. The poliomyelitis epidemic occurred in 1909. We know that anterior poliomyelitis occurs under many often

atypical forms. It would certainly seem very possible that in herpes zoster we are dealing with one of these unusual types.

In an effort to institute specific treatment for anterior poliomyelitis Netter inoculated subdurally 4 patients with serum from recovered human cases. The donors of the serum used numbered 10, and had been sick anywhere from two months to eleven years previously. The amount inoculated was generally 7 cubic centimeters, with a maximum of 15 cubic centimeters. One patient received 9 inoculations, amounting to 103 cubic centimeters.

Four patients were treated in all. One died. Netter thinks the other 3 were improved by treatment.

It is thus painfully evident that we are still very ignorant concerning anterior poliomyelitis.

It is pleasing to reflect, however, that investigators of the first class are studying this disease all over the world, and that the quality of the work is such that the key to the problem may be discovered almost at any moment.

#### DISCUSSION.

**Dr. SLEMONS.**—In this discussion I would like to report a small epidemic which occurred in our city during the summer months. We had 9 cases, each occurring in large families. As the diagnoses in these cases were delayed, and absolutely no attempt made at isolation, the exposures were necessarily very complete. In each family there were three or more separate exposures, and in no instance was there any evidence of secondary cases from the original nine primary infections.

These cases occurred within a very short time, and it is our belief that they were in no way connected with each other. It was absolutely impossible to trace these cases to any source of possible infection.

**Dr. DOWLING.**—Through investigation in North Louisiana we found 9 cases occurred in one neighborhood and others in the same parish removed 15 miles. Two weeks later 4 cases developed in Shreveport, 100 miles west, and a few days after this the disease appeared in Natchitoches, 90 miles south of Shreveport, from which place a loving mother with two sweet children fled to escape the ravages of this dreaded disease. Before she reached the border line, a little more than 100 miles, both of the children showed positive evidences of the infection and both were paralyzed. These were chiefly sporadic cases, and there is but little doubt that the same conditions existed at different points to cause the disease.

While returning from California last summer I read in a Chicago paper of the anti-fly campaign in Kansas, and was surprised and grati-

fied to learn from this article that the infantile paralysis had disappeared in communities where the flies had been exterminated.

Dr. ROBERTS.—In reference to the remarks of Dr. Richardson concerning the greater prevalence of the disease in rural districts than in cities, I might say that our outbreak in Hamilton, probably the first serious one in Canada, and comprising some 100 cases, seemed to originate in 3 or 4 cases early in July or the latter part of June. Then we had a sudden outburst of some 40 or 50 cases during the end of July and first two weeks of August, with a gradual decline until the month of November. The disease in our section certainly appeared to spread from city to country, as it was some considerable time definitely existent in the city before reports and inquiries began to come to me from the country and smaller towns, one or two some 60 miles away, about the strange new epidemic. Information that came to me from Ottawa and Guelph would seem to indicate the same.

In the early cases there were a couple of instances where the disease was traceable to contact with children in houses where the disease was,—the well children coming down in a couple of weeks after being with the affected.

Dr. GUITERAS.—The greater prevalence of the disease among the whites over the negro population, I think, would argue against the transmission by biting flies about the stables.

Dr. RICHARDSON.—I hope I did not give the impression that I considered this theory to be absolutely proved. As to why the disease affects rural localities more than cities, we have no idea. It seems to be a fact, however, that in rural communities the disease is approximately ten times as frequent as in the larger cities.

#### A REVIEW OF THE LITERATURE ON THE COMPOSITION OF EXPIRED AIR.<sup>1</sup>

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BY H. LINENTHAL, M.D., STATE INSPECTOR OF HEALTH.

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The ill effects upon the health of occupants of poorly ventilated rooms is too well known to need any elaborate comment. People living under conditions of overcrowding and poor ventilation have less resistance to the invasion of infectious diseases; this has been so often demonstrated that the proposition that good ventilation is necessary for the preservance of health has become axiomatic.

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<sup>1</sup> Read at the December, 1911, meeting of the Association of the State Inspectors of Health of Massachusetts.

But the question as to what constitutes good ventilation, as to what are the standards by which we are to decide whether the air in a room is such as to be injurious to the health of the occupants, is still, in a measure, an underdetermined question. Whether or not the injurious effect of foul air is due to its chemical composition, to the presence of certain gases or organic poisons usually designated under the common name of "crowd poisons," is still unsettled. The tendency of more recent investigations is to attribute the ill effects of poorly ventilated rooms to the physical state of the air,—to the temperature and humidity rather than to its chemical composition.

The more apparent and most easily determined impurity excreted from the lungs of animals is that of carbonic acid gas, and for a time all the symptoms of discomfort experienced in ill-ventilated rooms was attributed to the effect of the accumulation of this gas in the air. But as early as 1860 Pettenkofer demonstrated that the discomfort in ill-ventilated rooms was not due to the excess of CO<sub>2</sub>, nor to the decrease of oxygen in the air, neither of these being sufficient in quantity to produce toxic symptoms. He announced, however, the rule that the quantity of CO<sub>2</sub> may serve as an index to other impurities in the air exhaled in the breath. This rule is still in vogue and forms the basis of nearly all existing standards of ventilation.

Various investigators have attempted to establish experimentally the existence of organic poisons in impure air to account for its toxic effects. The results of these investigators have not been uniform and the conclusions have been contradictory.

In 1863 Hammond confined a mouse in a glass jar and removed the moisture and CO<sub>2</sub> as soon as formed, supplying at the same time fresh air to take their place. The mouse died in about forty minutes. This experiment was repeated a number of times with the same result. He concluded that death was due to the organic poisons in the expired air.

In 1887 Brown Sequard and D'Arsonval condensed the moisture of exhaled breath of men and injected the condensed liquid into rabbits, obtaining toxic symptoms which they believed was due to a volatile organic poison contained in the condensed moisture. A repetition of similar experiments by other investigators, however, gave negative results.

In 1888 Brown Sequard and D'Arsonval reported a series of experiments giving additional evidence to their views. Four rabbits were confined in a series of metal cages connected with rubber tubing through which a constant current of air was aspirated. The animal in the last cage breathed the air loaded with the impurities from the lungs of the

animals in the other cages. This animal died after a short interval. After another period of time the animal in the third cage died. The first and second animals usually remained alive. When tubes containing concentrated H<sub>2</sub> SO<sub>4</sub> were placed between the third and fourth cages the fourth animal remained alive, while the third one died. They concluded that the volatile poison which produced death in these animals was absorbed by the H<sub>2</sub> SO<sub>4</sub>, thus saving the life of the last animal.

A great many other investigators, however, such as Beu, Rauer, Lubbert, Lehman, Jessen, Formanek and others, failed to confirm the above experiments, and have not found any evidence of the existence of organic poison in the expired breath. Holden and Smith in 1892 published experiments in which animals were supplied with air charged with organic matter drawn from the breath of other animals. The results were negative. It will thus be seen that different investigators reported widely different results, the majority of them denying that the breath of healthy animals contained any organic poison or any poisonous products.

In 1895 Billings, Mitchell and Bergey carried on an investigation in the Smithsonian Institute upon "the composition of expired air and its effect on animal life." In their report is given an excellent review of the literature up to that date. The conclusions of these investigators, based on experimental evidence, are that the bad effects of poor ventilation are not due to organic poisons in the exhaled air; nor can the discomfort experienced in poorly ventilated rooms be attributed to the increase of CO<sub>2</sub> or diminution of oxygen, neither of which is sufficiently great to produce any effects. Excessive temperature and unpleasant odors are in a measure responsible for the discomfort experienced in closed, overcrowded rooms. The problem of securing good ventilation in inhabited rooms consists in the best methods of preventing dusts of various kinds, of properly regulating the temperature and moisture, and of preventing the entrance of poisonous gases, like carbon monoxide, rather than simply diluting the air to a certain standard of proportion of carbonic acid present.

In 1903 Wolpert conducted experiments on the exchange of gases, and he demonstrated that the excretion of CO<sub>2</sub> by persons confined in air-tight rooms diminished at the end of an experiment lasting from one and one-half to three and one-half hours. He concluded that the injurious effect on the organism of poorly ventilated rooms is due to the accumulation of expired air, which diminishes the excretion of CO<sub>2</sub> from the system and thereby disturbs the body metabolism.

In 1905 a series of valuable contributions were made by Flügge and his pupils from the Breslau laboratory. Heymann took up the question

as to whether expired air influences the elimination of CO<sub>2</sub>, as was maintained by Wolpert. He points out the errors in Wolpert's technique and in his methods of computation; and, based on a large number of experiments, he concludes that the air immediately surrounding the head of a person has a greater CO<sub>2</sub> content than the room as a whole, and that people very often breathe air containing large quantities of CO<sub>2</sub>. The ill effects of poor ventilation, therefore, cannot be attributed to diminished elimination of CO<sub>2</sub>.

Paul carried on experiments in a closed box in which the CO<sub>2</sub> could be materially increased. The percentage of this gas was at times as high as 15 or 16 parts per 1,000. There was in consequence an accumulation of CO<sub>2</sub> which never occurs under ordinary conditions; but as long as the temperature and humidity were kept low the subject did not experience any ill effects. Tests were also made to determine mental fatigue in his subjects by means of the aesthesiometer, ergograph, or giving the subject calculations to perform. The power of attention of the subject after a confinement in the closed chamber was likewise tested, but all such tests were negative as long as the temperature and humidity of the chamber were kept low. When, however, the temperature and moisture became relatively high, unpleasant effects began to manifest themselves. Even when the inspired air was taken through a tube from the outside of the chamber the disagreeable effects were present as long as the body of the subject was exposed to the high temperature and high humidity of the box. On the other hand, if the body of the subject was placed outside the chamber, no discomfort was observed, even when the subject inhaled through a tube the impure air of the box.

Using the same apparatus of Paul, Ercklentz carried on a series of experiments with patients from the hospital and invalids, classes of persons who are especially sensitive to impure air. His results were similar to those of Paul. Flügge summarizes these investigations as follows:—

1. Numerous researches, with accurate experimental methods and with exact regard to thermal conditions, on both healthy and diseased subjects, have shown that the chemical variations of the composition of the atmosphere, which occur in inhabited rooms through the gaseous excretions of men, do not exercise an injurious effect on the health of the inhabitants.
2. Whenever in shut-up, crowded rooms certain impairment of health ensues, involving headache, dizziness, sickness, etc., these symptoms are attributable solely to heat retention.
3. The physical conditions of the surrounding atmosphere, viz., temperature, humidity and movement, are of enormously greater importance

for our comfort and health than the chemical composition of the air. Further, the refreshing sensation noticeable on abundant ventilation of closed rooms, or in the open air, results not from the greater chemical purity of the air, but from the more rapid heat-loss from the body.

4. Overheating of our dwelling rooms must, therefore, from a practical point of view, be avoided. While this is often difficult of accomplishment in the height of the summer, it can be easily carried out during the rest of the year.

5. It is of first importance that the arrangements for heating should be so regulated that the temperature never exceeds the limit of  $21^{\circ}$  C. ( $70^{\circ}$  F.). Especially should this control be exercised in public rooms, such as schools, etc. As a rule, the temperature of heated rooms should be  $17^{\circ}$  to  $19^{\circ}$  C. ( $62.6^{\circ}$  to  $66.2^{\circ}$  F.).

6. In overheated rooms a certain relief can be brought about by artificial circulation of the air, without the introduction of air from outside.

7. To bring about relief in heated rooms by ventilation is dangerous, and should be avoided in winter during the use of the rooms by persons, since chill readily ensues from the influence of the cold air current on the overheated skin.

8. On the other hand, the overheating can easily be avoided by periodical ventilation of the rooms during untenanted hours.

9. From the unpleasant smells present in dwelling rooms, which result chiefly from the decomposition of matter on the skin and mucous membrane, and also on the clothes of the persons present, no injurious effect on health has been demonstrated.

10. Nevertheless, these smells cause a feeling of nausea on entering the rooms, and from a practical point of view should be obviated.

11. This can be brought about partly by prevention and deodorization and partly by continuous exhaust ventilation, or by periodical thorough ventilation of the rooms while untenanted.

12. Ventilation takes no part in freeing inhabited rooms from dust or contagion. I would repeat that without doubt symptoms of ill-health are observable in overcrowded rooms, and that an evil-smelling atmosphere is certainly to be objected to for those who are sensitive to it, and that very great importance must be ascribed to the enjoyment of fresh air; but I would also make clear the object of these requirements. It is not the chemical composition of the air but the overheating of rooms that has the chief evil influence on health, and it is the latter that must be combated. The objection to evil-smelling atmosphere is to be supported, not on account of its poisonous properties, which have never been proved to exist, but on account of the resulting feeling of

nausea; and fresh air is desirable for men, not because they then breathe chemically purer air, but because the continual movement of the fresh air facilitates the loss of heat from their bodies, and exercises, besides, a very beneficial stimulus on their skin.

In 1907 Benedict and Milner, in reporting the results of their experiments on the metabolism of matter and energy in the human body, which were carried on in the experiment station of the United States Department of Agriculture, incidentally discussed the question of ventilation. In order to determine with absolute accuracy the intake and output of the organism, including the output of water through respiration and perspiration, and the output of carbon dioxide, they carried on their experiments in the respiration calorimeter. Briefly, this consisted of a metal-walled chamber, 7 feet long, 4 feet wide and 6 feet high, through which a current of air was made to pass. Analyses of the air before it entered the chamber and after it left the chamber gave data for computing quantity of  $\text{CO}_2$  and water vapor eliminated by the subject. When they had to consider the ventilation of this chamber they found that it would not be practical to supply the amount of air regarded as the standard for good ventilation, namely, 3,000 cubic feet per hour. This would have necessitated a change in the air of the calorimeter about once in four minutes.

In their preliminary experiments it was noticed that persons could remain in the air-tight chamber for several hours without discomfort, even when there was no current of air. Later, when a heat absorber was installed, the period could be prolonged without discomfort. No experiments were made to determine when discomfort would begin to manifest itself.

In some of the experiments the subject was confined for nine and twelve days. An air pump was so adjusted as to supply about 4 cubic feet of air per minute, or only one-twelfth of that considered requisite. In some of the experiments this was cut down to 3 and even  $2\frac{1}{2}$  cubic feet per minute. At no time, even when the experiments lasted five to nine days, did the subject experience any discomfort. The analyses of the air coming from the chamber showed under all conditions a high degree of carbon dioxide. In the "rest" experiments the  $\text{CO}_2$  contents was often twenty-three times the normal contents, or 39 parts per 10,000. In the "work" experiments, where the subject was required to do hard, physical work, such as riding a stationary bicycle, the  $\text{CO}_2$  increased. One test showed the  $\text{CO}_2$  contents to be sixty-one times as great as that of normal air, or 183 parts of  $\text{CO}_2$  to 10,000 parts of air, yet the subject did not complain of any ill effects. On opening the window after an experiment the air of the chamber felt

"close" to an outsider, but was not noticed by the subject. Physically and mentally the subjects remained entirely uninfluenced by their long sojourn in the vitiated atmosphere.

The air entered the chamber dry and the moisture generated came from the subject. The quantity of moisture in the air of the chamber was greatly reduced in the work experiments by the heat absorber, which consisted of a water coil through which water was circulating. In the work experiments the temperature of the heat-absorbing device was frequently below dew point, and the moisture was condensed on this apparatus. During the work experiments a liter or more of water was thus condensed each day. The relative humidity was about 75 per cent. during the work periods and considerably lower in the periods of rest. If there were any concomitant impurities in the air of a toxic nature this condensed moisture would naturally contain them. A large number of experiments were made in which quantities of the condensed moisture were injected subcutaneously in white rats, but in all cases the results were negative.

The conclusion of the authors is that the chief factors producing discomfort in poorly ventilated rooms are not the chemical impurities of the air, but the temperature and moisture, conditions which affect the heat elimination of the body.

The most recent contribution to the subject is that by Rosenau and Amoss, in the September, 1911, number of the "Journal of Medical Research." These investigators used the reaction of anaphylaxis to demonstrate the existence of organic matter in the expired air of men and animals. While these researches do not demonstrate that the organic substances found in exhaled air have any toxic properties, the method of attacking the problem is a new one and opens up large fields for future research. The anaphylactic reaction is extremely delicate, and will reveal quantities so minute that they cannot be detected by chemical tests.

Briefly, the method was as follows: the moisture in the expired breath of man was condensed and the liquid thus obtained was injected into guinea pigs. After a suitable interval—two weeks or over—the guinea pigs were injected with normal human blood serum. In all, 99 animals were tested, and 26 gave definite symptoms of anaphylactic shock. In 4 animals the reaction was so severe that the anaphylactic shock caused death. Inasmuch as the anaphylactic reaction is specific in character, the positive results indicated that the sensitizing injection—the expired air—must have contained proteins identical with those in the blood serum. Whether the proteins in the expired breath have a poisonous action was, of course, not demonstrated by these experiments.

The work is of extraordinary interest, inasmuch as it opens up a vast field of inquiry as to the nature of these proteins, whether they are toxic, as to quantitative differences in individuals and under various conditions, and as to the difference in the expired air in health and in disease.

From the review of the above literature it can be seen that while the question as to whether the expired air contains any substances injurious to the animal organism is still regarded by many as unsettled, in view of the thorough experimental work by many competent observers it can no longer be questioned that temperature and humidity are factors of extreme importance in determining the proper ventilation of premises, and that careful attention to these factors is of greater importance than the determination of carbonic acid gas.

ACTS OF 1912, CHAPTER 448.

AN ACT TO AUTHORIZE BOARDS OF HEALTH TO MAKE RULES AND REGULATIONS IN REGARD TO THE KEEPING AND EXPOSING FOR SALE OF ARTICLES OF FOOD.

*Be it enacted, etc., as follows:*

Section seventy of chapter fifty-six of the Revised Laws, as amended by section one of chapter four hundred and eleven of the acts of the year nineteen hundred and eight, is hereby further amended by adding at the end thereof, the words:— Boards of health of cities and towns may make and enforce reasonable rules and regulations, subject to the approval of the state board of health, as to the conditions under which all articles of food may be kept for sale or exposed for sale, in order to prevent contamination thereof and injury to the public health. Before the board of health of any city or town submits such rules and regulations to the state board of health for approval it shall hold a public hearing thereon, of which notice shall be given by publication for two successive weeks, the first publication to be at least fourteen days prior to the date of the hearing, in a newspaper published in such city or town, or, if none is so published, in a newspaper published in the county in which such city or town is located. Any person affected by such rules and regulations, in the form in which they are presented to the state board of health for approval, may appeal to the said board for a further hearing, and said board shall not grant its approval to rules and regulations concerning which such an appeal has been taken until it has held a public hearing thereon, advertised in the manner specified above in this section with reference to hearings before boards of health in cities and towns,—so as to read as follows:— *Section 70.* Boards of health of cities and towns, by themselves, their officers or agents, may inspect the carcasses of all slaughtered animals and all meat, fish, vegetables, produce, fruit or provisions of any kind found in their cities or towns, and for such purpose may enter any building, enclosure or other place in which such carcasses or articles are stored, kept or exposed for sale. If, on such inspection, it is found that such carcasses or

articles are tainted, diseased, corrupted, decayed, unwholesome or, from any cause, unfit for food, the board of health shall seize the same and cause it or them to be destroyed forthwith or disposed of otherwise than for food. All money received by the board of health for property disposed of as aforesaid shall, after deducting the expenses of said seizure, be paid to the owner of such property. If the board of health seizes or condemns any such carcass or meat for the reason that it is affected with a contagious disease, it shall immediately give notice to the board of cattle commissioners of the name of the owner or person in whose possession it was found, the nature of the disease and the disposition made of said meat or carcass.

Boards of health of cities and towns may make and enforce reasonable rules and regulations, subject to the approval of the state board of health, as to the conditions under which all articles of food may be kept for sale or exposed for sale, in order to prevent contamination thereof and injury to the public health. Before the board of health of any city or town submits such rules and regulations to the state board of health for approval it shall hold a public hearing thereon, of which notice shall be given by publication for two successive weeks, the first publication to be at least fourteen days prior to the date of the hearing, in a newspaper published in such city or town, or, if none is so published, in a newspaper published in the county in which such city or town is located. Any party affected by such rules and regulations, in the form in which they are presented to the state board of health for approval, may appeal to the said board for a further hearing, and said board shall not grant its approval to rules and regulations concerning which such an appeal has been taken until it has held a public hearing thereon, advertised in the manner specified above in this section with reference to hearings before boards of health in cities and towns. [Approved April 8, 1912.]

#### ACTS OF 1912, CHAPTER 452.

#### AN ACT RELATIVE TO THE EMPLOYMENT OF CHILDREN AND WOMEN IN CERTAIN WORKSHOPS CONNECTED WITH MERCANTILE ESTABLISHMENTS.

*Be it enacted, etc., as follows:*

SECTION 1. Section one of chapter three hundred and thirteen of the acts of the year nineteen hundred and eleven is hereby amended by striking out the word "making", in the sixth line, so as to read as follows:—*Section 1.* The provisions of section forty-seven of chapter five hundred and fourteen of the acts of the year nineteen hundred and nine, relative to the employment of children and women in mercantile establishments, shall also apply to children and women employed in a workshop for the altering or repairing of garments: *provided*, that the workshop is connected with a mercantile establishment where the said garments are sold at retail, and is owned and operated by the proprietor of such mercantile establishment; and *provided, also*, that such children and women shall not be employed more than fifty-six hours in any one week. The provisions of section forty-eight of the said chapter shall not apply to children and women employed as aforesaid.

SECTION 2. This act shall take effect upon its passage.

*(The foregoing was laid before the Governor on the second day of April, 1912, and after five days it had "the force of a law", as prescribed by the Constitution, as it was not returned by him with his objections thereto within that time.)*

ACTS OF 1912, CHAPTER 470.

AN ACT RELATIVE TO THE PREVENTION OF BLINDNESS IN INFANTS.

Be it enacted, etc., as follows:

SECTION 1. Section seventeen of chapter twenty-nine of the Revised Laws is hereby amended by inserting after the word "explanations", in the sixth line, the words:— including an explanation that chapter two hundred and fifty-one of the acts of the year nineteen hundred and five requires physicians, nurses, relatives or other attendants to report immediately to the local board of health every child one or both of whose eyes become inflamed, swollen and red and show an unnatural discharge within two weeks after birth,— so as to read as follows:— *Section 17.* The secretary of the commonwealth shall, at the expense of the commonwealth, prepare and furnish to the clerks and boards of health of cities and towns, and to the superintendent of the state hospital, record books, books for indexes thereto, forms for returns, on paper of uniform size, and any necessary instructions and explanations, including an explanation that chapter two hundred and fifty-one of the acts of the year nineteen hundred and five requires physicians, nurses, relatives or other attendants to report immediately to the local board of health every child one or both of whose eyes become inflamed, swollen and red and show an unnatural discharge within two weeks after birth. City and town clerks shall distribute the blank forms as the secretary shall direct. A city or town may provide such books and forms if they conform to those prepared by the secretary.

SECTION 2. This act shall take effect upon its passage. [Approved April 10, 1912.

ACTS OF 1912, CHAPTER 474.

AN ACT RELATIVE TO THE LABELLING OF CONTAINERS OF CONDENSED, CONCENTRATED AND EVAPORATED MILK AND SKIMMED MILK.

Be it enacted, etc., as follows:

SECTION 1. Chapter six hundred and ten of the acts of the year nineteen hundred and eleven is hereby amended by striking out section one and inserting in place thereof the following:— *Section 1.* Every container of evaporated, concentrated or condensed whole milk, and every container of evaporated, concentrated or condensed skimmed milk, sold or offered for sale or had in possession or custody with intent to sell by any person, firm or corporation within this commonwealth, shall have plainly printed thereon in the English language, or attached thereto on some firmly affixed tag or label, a formula for extending the said evaporated, concentrated or condensed milk and said evaporated, concentrated or condensed skimmed milk, respectively, with water. The formula for the extension of said evaporated, concentrated or condensed whole milk shall be such that the resulting milk product shall not

be below the Massachusetts standard of milk solids or fat for whole milk, and shall be in the following form:— By adding                  parts of water to one part of the contents of this can a resulting milk product will be obtained which will not be below the legal standard for whole milk. The formula for the extension of said evaporated, concentrated or condensed skimmed milk shall be such that the resulting milk product shall not be below the Massachusetts standard of milk solids for skimmed milk, and shall be in the following form:— By adding                  parts of water to one part of the contents of this can a resulting milk product will be obtained which will not be below the legal standard for skimmed milk.

SECTION 2. The provisions of this act with reference to the labelling of containers of condensed, concentrated and evaporated skimmed milk shall take effect upon the first day of October, in the year nineteen hundred and twelve; the remaining provisions of this act shall take effect upon the first day of January in the year nineteen hundred and fourteen. [Approved April 10, 1912.

ACTS OF 1912, CHAPTER 486.

AN ACT RELATIVE TO THE POWERS OF BOARDS OF HEALTH IN RELATION TO STABLES.

*Be it enacted, etc., as follows:*

Chapter one hundred and two of the Revised Laws is hereby amended by striking out section sixty-nine and inserting in place thereof the following:— *Section 69.* No person shall erect, occupy or use for a stable any building in a city or in a town having more than five thousand inhabitants unless such use is licensed by the municipal board of health, and, in such case, only to the extent so licensed. The provisions of this section shall not prevent any such occupation and use which was authorized by law on the fourth day of May in the year eighteen hundred and ninety-five, to the extent and by the person so authorized, but the board of health of such a city or town may make such regulations or orders relative to the drainage, ventilation, size and character of stalls, bedding, number of animals and the storage and handling of manure in any stable in their respective cities or towns as in their judgment the public health requires. [Approved April 13, 1912.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING MAY 4, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal In- fectious Dis- eases.	Tuberculosis, Pulmonary (or not classified).	Acute Lung Diseases.	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mesles.	Whooping Cough.
Boston, .	686,092	224	48	72	33	24	—	1	3	—	1	4
Worcester, .	145,986	40	9	18	11	7	—	—	—	—	—	—
Fall River, .	119,295	35	13	14	6	4	—	—	—	—	—	—
Lowell, .	106,294	27	9	13	7	1	—	—	—	—	—	—
Cambridge, .	104,839	32	9	16	3	5	—	—	—	—	—	—
New Bedford, .	96,652	28	8	9	6	—	—	—	—	—	—	—
Lynn, .	89,336	27	8	8	6	2	—	—	—	—	—	—
Springfield, .	88,926	27	6	5	1	2	—	—	—	—	—	—
Lawrence, .	85,892	22	7	9	4	3	—	—	—	—	—	—
Somerville, .	77,236	10	3	2	2	—	—	—	—	—	—	—
Holyoke, .	57,730	20	9	9	7	2	—	—	—	—	—	—
Brockton, .	56,878	10	1	1	—	—	—	—	—	—	—	—
Malden, .	44,404	13	5	2	1	—	—	—	—	—	—	—
Haverhill, .	44,115	18	6	9	—	4	—	—	—	—	—	—
Salem, .	43,697	12	2	2	1	—	—	—	—	—	—	—
Newton, .	39,806	13	3	1	1	—	—	—	—	—	—	—
Fitchburg, .	37,826	5	1	1	—	—	—	—	—	—	—	—
Taunton, .	34,259	14	6	6	4	—	—	—	—	—	—	—
Everett, .	33,484	12	—	2	—	—	—	—	—	—	—	—
Quincy, .	32,642	13	3	3	2	—	—	—	—	—	—	—
Chelsea, .	32,452	12	2	3	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	7	—	3	1	—	—	—	—	—	—	—
Waltham, .	27,834	8	2	2	—	—	—	—	—	—	—	—
Brookline, .	27,792	5	1	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	3	0	—	—	—	—	—	—	—	—	—
Gloucester, .	24,395	6	1	—	—	—	—	—	—	—	—	—
Medford, .	23,150	2	1	1	—	—	—	—	—	—	—	—
North Adams, .	22,019	4	—	1	—	—	—	—	—	—	—	—
Northampton, .	19,431	7	0	1	—	—	—	—	—	—	—	—
Beverly, .	18,650	2	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	5	1	—	2	—	—	—	—	—	—	—
Leominster, .	17,580	1	—	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	2	0	2	—	—	—	—	—	—	—	—
Westfield, .	16,044	6	—	5	—	—	—	—	—	—	—	—
Peabody, .	15,721	—	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	3	—	1	—	—	—	—	—	—	—	—
Woburn, .	15,308	4	1	2	—	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	3	1	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	4	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	6	2	3	—	—	—	—	—	—	—	—
Milford, .	13,055	6	0	—	—	—	—	—	—	—	—	—
Adams, .	13,026	0	—	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	0	1	1	—	—	—	—	—	—	—
Southbridge, .	12,592	2	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	4	3	2	—	—	—	—	—	—	—	1
Webster, .	11,509	4	1	1	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	2	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	1	1	1	—	—	—	—	—	—	—	—
Winthrop, .	10,132	5	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of report- ing towns, .	2,577,764	729	175	236	112	69	12	8	1	1	10	2
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WEEK ENDING MAY 11, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or n.o.t. classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.
Boston, .	686,092	194	51	73	36	19	5	2	-	-	1
Worcester, .	145,986	39	12	7	4	1	1	-	-	1	-
Fall River, .	119,295	27	13	15	-	4	-	-	-	1	-
Lowell, .	106,294	40	19	17	9	3	-	-	-	1	-
Cambridge, .	104,839	27	9	14	6	4	-	-	-	1	-
New Bedford, .	96,652	30	12	15	7	5	5	-	-	1	-
Lynn, .	89,336	14	4	4	2	1	1	-	-	1	-
Springfield, .	88,926	23	5	7	1	2	2	-	-	1	-
Lawrence, .	85,892	26	5	12	7	3	3	-	-	1	-
Somerville, .	77,236	24	3	9	3	4	2	-	-	1	-
Holyoke, .	57,730	14	6	6	3	2	1	-	-	1	-
Brockton, .	56,878	15	6	5	2	1	1	-	-	1	-
Malden, .	44,404	7	2	1	1	1	1	-	-	1	-
Haverhill, .	44,115	19	1	5	1	1	1	-	-	1	-
Salem, .	43,697	13	-	6	3	2	1	-	-	1	-
Newton, .	39,806	6	1	-	-	-	2	-	-	1	-
Fitchburg, .	37,826	8	2	-	-	-	-	-	-	1	-
Taunton, .	34,259	22	4	7	4	1	-	-	-	1	-
Everett, .	33,484	4	2	1	-	-	-	-	-	1	-
Quincy, .	32,642	8	1	-	-	-	-	-	-	1	-
Chelsea, .	32,452	14	4	-	-	-	-	-	-	1	-
Pittsfield, .	32,121	6	-	4	4	4	-	-	-	1	-
Waltham, .	27,834	1	0	-	-	-	-	-	-	1	-
Brookline, .	27,792	11	2	1	1	1	-	-	-	1	-
Chicopee, .	25,401	8	0	1	1	1	-	-	-	1	-
Gloucester, .	24,398	4	-	-	-	-	-	-	-	1	-
Medford, .	23,150	4	1	1	1	1	1	-	-	1	-
North Adams, .	22,019	6	2	1	1	1	1	-	-	1	-
Northampton, .	19,431	5	1	-	-	-	-	-	-	1	-
Beverly, .	18,650	3	-	-	-	-	-	-	-	1	-
Revere, .	18,219	3	2	1	1	1	-	-	-	1	-
Leominster, .	17,580	3	-	2	1	1	1	-	-	1	-
Attleborough, .	16,215	6	2	2	2	1	-	-	-	1	-
Westfield, .	16,044	10	3	4	2	1	-	-	-	1	-
Peabody, .	15,721	-	-	1	-	-	-	-	-	1	-
Melrose, .	15,715	4	-	1	-	-	-	-	-	1	-
Woburn, .	15,308	7	-	2	1	1	-	-	-	1	-
Newburyport, .	14,949	6	2	2	1	1	-	-	-	1	-
Gardner, .	14,699	5	1	-	-	-	-	-	-	1	-
Marlborough, .	14,579	6	2	-	2	1	-	-	-	1	-
Clinton, .	13,075	1	-	-	-	-	-	-	-	1	-
Milford, .	13,055	3	0	-	-	-	-	-	-	1	-
Adams, .	13,026	1	1	-	-	-	-	-	-	1	-
Framingham, .	12,948	4	2	1	-	-	-	-	-	1	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	1	-
Watertown, .	12,875	2	0	-	-	-	-	-	-	1	-
Southbridge, .	12,592	3	1	2	2	2	-	-	-	1	-
Plymouth, .	12,141	0	-	1	-	-	-	-	-	1	-
Webster, .	11,509	3	1	1	-	-	-	-	-	1	-
Methuen, .	11,448	0	-	-	-	-	-	-	-	1	-
Wakefield, .	11,404	1	1	-	-	-	-	-	-	1	-
Arlington, .	11,187	2	1	-	-	-	-	-	-	1	-
Greenfield, .	10,427	5	1	2	1	1	-	-	-	1	-
Winthrop, .	10,132	1	-	-	-	-	-	-	-	1	-

## Recapitulation.

Total of reporting towns, .	2,577,764	695	188	232	113	61	15	4	1	3	4
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WEEK ENDING MAY 18, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	DEATHS FROM —												
		Reported Deaths in Each.	Deaths under Five Years.	Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mumps.	Whooping Cough.		
Boston, .	686,092	216	56	75	33	20	5	-	-	-	-	3	1	1
Worcester, .	145,986	38	14	17	9	3	2	-	-	-	-	1	1	1
Fall River, .	119,295	36	15	15	6	4	1	-	-	-	-	4	-	-
Lowell, .	106,294	37	17	18	6	3	-	-	-	-	-	-	-	-
Cambridge, .	104,839	23	4	9	4	3	-	-	-	-	-	-	-	-
New Bedford, .	96,652	34	16	6	4	-	-	-	-	-	-	-	-	-
Lynn, .	89,336	27	6	7	4	1	-	-	-	-	-	-	-	-
Springfield, .	88,926	40	8	12	4	6	-	-	-	-	-	-	-	-
Lawrence, .	85,892	32	13	15	3	3	-	-	-	-	-	-	-	-
Somerville, .	77,236	26	4	9	2	4	-	-	-	-	-	-	-	-
Holyoke, .	57,730	11	7	6	3	2	-	-	-	-	-	-	-	-
Brockton, .	56,878	11	2	4	2	2	-	-	-	-	-	-	-	-
Malden, .	44,404	12	1	2	1	1	-	-	-	-	-	-	-	-
Haverhill, .	44,115	13	2	1	1	1	-	-	-	-	-	-	-	-
Salem, .	43,697	18	2	1	1	1	-	-	-	-	-	-	-	-
Newton, .	39,806	7	-	2	1	1	-	-	-	-	-	-	-	-
Fitchburg, .	37,826	8	3	-	2	1	-	-	-	-	-	-	-	-
Taunton, .	34,259	13	3	6	4	2	-	-	-	-	-	-	-	-
Everett, .	33,484	7	1	1	1	2	-	-	-	-	-	-	-	-
Quincy, .	32,642	3	1	-	-	-	-	-	-	-	-	-	-	-
Chelsea, .	32,452	15	4	5	3	2	-	-	-	-	-	-	-	-
Pittsfield, .	32,121	16	2	4	2	1	-	-	-	-	-	-	-	-
Waltham, .	27,834	5	0	-	4	2	-	-	-	-	-	-	-	-
Brookline, .	27,792	9	2	3	1	2	-	-	-	-	-	-	-	-
Chicopee, .	25,401	11	5	5	4	1	-	-	-	-	-	-	-	-
Gloucester, .	24,398	11	2	1	1	1	-	-	-	-	-	-	-	-
Medford, .	23,150	5	1	2	1	1	-	-	-	-	-	-	-	-
North Adams, .	22,019	8	2	2	2	1	-	-	-	-	-	-	-	-
Northampton, .	19,481	9	3	2	1	1	-	-	-	-	-	-	-	1
Beverly, .	18,650	5	1	3	2	1	-	-	-	-	-	-	-	-
Revere, .	18,219	4	1	1	1	1	-	-	-	-	-	-	-	-
Leominster, .	17,580	3	1	1	1	1	-	-	-	-	-	-	-	-
Attleborough, .	16,215	4	0	-	1	1	-	-	-	-	-	-	-	-
Westfield, .	16,044	5	-	-	2	2	-	-	-	-	-	-	-	-
Peabody, .	15,721	4	-	-	2	2	-	-	-	-	-	-	-	-
Melrose, .	15,715	2	-	-	1	2	-	-	-	-	-	-	-	-
Woburn, .	15,308	2	0	-	2	2	-	-	-	-	-	-	-	-
Newburyport, .	14,949	3	0	1	2	1	-	-	-	-	-	-	-	-
Gardner, .	14,699	1	-	-	1	1	-	-	-	-	-	-	-	-
Marlborough, .	14,579	4	2	-	1	1	-	-	-	-	-	-	-	-
Clinton, .	13,075	3	1	2	1	1	-	-	-	-	-	-	-	-
Milford, .	13,055	6	1	2	1	2	-	-	-	-	-	-	-	-
Adams, .	13,026	2	0	1	1	1	-	-	-	-	-	-	-	-
Framingham, .	12,948	4	1	-	-	-	-	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	3	0	-	-	-	-	-	-	-	-	-	-	-
Southbridge, .	12,592	3	-	-	-	-	-	-	-	-	-	-	-	-
Plymouth, .	12,141	2	-	-	-	-	-	-	-	-	-	-	-	-
Webster, .	11,509	1	0	1	1	1	-	-	-	-	-	-	-	-
Methuen, .	11,448	2	-	-	-	-	-	-	-	-	-	-	-	-
Wakefield, .	11,404	2	-	-	-	-	-	-	-	-	-	-	-	-
Arlington, .	11,187	8	1	1	-	-	-	-	-	-	-	-	-	-
Greenfield, .	10,427	2	-	-	-	-	-	-	-	-	-	-	-	-
Winthrop, .	10,132	0	-	-	-	-	-	-	-	-	-	-	-	-

*Recapitulation.*

Total of reporting towns, .	2,577,764	774	206	251	112	71	12	4	2	6	9	5
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WEEK ENDING MAY 25, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	197	52	58	23	20	1	1	1	1	2
Worcester, .	145,986	47	17	18	10	3	1	—	3	1	1
Fall River, .	119,295	33	14	16	8	1	—	—	1	1	1
Lowell, .	106,294	48	23	20	7	2	—	—	—	—	—
Cambridge, .	104,839	26	4	4	3	1	—	—	—	—	—
New Bedford, .	96,652	21	8	8	4	1	—	—	—	—	—
Lynn, .	89,336	23	3	5	2	3	1	—	—	—	—
Springfield, .	88,926	24	3	6	3	1	—	—	—	—	—
Lawrence, .	85,892	17	8	8	3	1	—	—	—	—	—
Somerville, .	77,236	26	5	5	3	3	—	—	—	—	—
Holyoke, .	57,730	13	5	6	5	3	—	—	—	—	—
Brockton, .	56,878	9	0	1	—	—	—	—	—	—	—
Malden, .	44,404	6	1	3	2	2	—	—	—	—	—
Haverhill, .	44,115	7	3	3	1	1	—	—	—	—	—
Salem, .	43,697	16	5	2	1	1	—	—	—	—	—
Newton, .	39,806	8	—	2	2	—	—	—	—	—	—
Fitchburg, .	37,826	8	2	—	—	—	—	—	—	—	—
Taunton, .	34,259	15	6	6	3	—	—	—	—	—	—
Everett, .	33,484	9	1	1	—	1	—	—	—	—	—
Quincy, .	32,642	3	2	—	—	—	—	—	—	—	—
Chelsea, .	32,452	13	3	4	2	1	—	—	—	—	—
Pittsfield, .	32,121	6	3	—	2	1	—	—	—	—	—
Waltham, .	27,834	3	1	2	1	1	—	—	—	—	—
Brookline, .	27,792	5	—	3	3	—	—	—	—	—	—
Chicopee, .	25,401	8	6	1	—	—	—	—	—	—	—
Gloucester, .	24,398	5	—	1	—	—	—	—	—	—	—
Medford, .	23,150	7	—	3	3	—	—	—	—	—	—
North Adams, .	22,019	6	2	2	2	1	—	—	—	—	1
Northampton, .	19,431	9	4	4	—	2	1	—	—	—	—
Beverly, .	18,650	4	—	—	—	—	—	—	—	—	—
Revere, .	18,219	4	—	1	3	1	1	—	—	—	—
Leominster, .	17,580	4	2	1	1	1	—	—	—	—	—
Attleborough, .	16,215	1	0	—	—	—	—	—	—	—	—
Westfield, .	16,044	4	1	—	—	—	—	—	—	—	—
Peabody, .	15,721	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	2	1	1	1	1	—	—	—	—	—
Woburn, .	15,308	3	1	—	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	3	2	1	—	—	—	—	—
Gardner, .	14,699	4	3	1	1	1	—	—	—	—	—
Marlborough, .	14,579	1	1	—	—	—	—	—	—	—	—
Clinton, .	13,075	2	—	—	—	—	—	—	—	—	—
Milford, .	13,055	4	0	1	—	—	—	—	—	—	—
Adams, .	13,026	5	1	1	—	—	—	—	—	1	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	2	0	1	—	—	1	—	—	—	—
Southbridge, .	12,592	3	2	—	—	—	—	—	—	—	—
Plymouth, .	12,141	1	—	—	—	—	—	—	—	—	—
Webster, .	11,509	5	0	2	1	1	1	—	—	—	—
Methuen, .	11,448	4	3	1	1	1	—	—	—	—	—
Wakefield, .	11,404	4	1	3	2	—	—	—	—	—	—
Arlington, .	11,187	1	—	1	1	1	—	—	—	—	—
Greenfield, .	10,427	1	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	5	—	3	2	—	1	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,577,764	687	197	214	104	48	14	8	5	—	11	5
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF MAY 4, 11, 18 AND 25, 1912.**

DISEASE.	Place.	WEEK ENDING -			
		May 4.	May 11.	May 18.	May 25.
Cerebro-spinal meningitis.	Boston, Worcester, Lowell, Springfield, Somerville, Haverhill, Taunton, Beverly, Melrose,	- - 2 1 - 4 - - 1	- - - 1 2 - - - -	1 2 - - - - - 1 - -	1 - - - - 1 - - - -
Erysipelas, . . .	Boston, Lawrence, Springfield, Melrose, Taunton,	- - 1 - -	4 - - 1 1	3 1 - - -	- - - - -
Influenza, . . .	Boston, Lowell,	. . . .	1 - - 2	- 2 - -	- - - -
Puerperal fever, .	Boston, Fall River, Cambridge, Springfield, Lawrence, Southbridge,	. . . . . . . . . . . .	1 - - - 1 -	1 - - 2 - -	1 - 1 - 2 1
Diarrhoeal diseases, .	Boston, Fall River, Cambridge, New Bedford, Springfield, Lawrence, Holyoke, Malden, Taunton, Revere, Wakefield, Northampton,	. . . .	3 2 2 - - - 1 - 1 - - - 1	5 2 1 2 1 1 - - 1 - - - 1	6 2 1 1 3 1 - - 1 - - - 1
Anterior poliomyelitis,	Lowell, Springfield, Taunton,	. . . . . .	- - -	- - -	1 1 -

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
MAY 4, 11, 18, and 25, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —				
	May 4.	May 11.	May 18.	May 25.	Total.
Diphtheria, . . . . .	110	99	70	95	374
Measles, . . . . .	802	917	820	957	3,496
Scarlet fever, . . . . .	90	125	104	87	406
Typhoid fever, . . . . .	14	33	31	33	111
Tuberculosis, pulmonary (or not classified), . . . . .	192	177	172	147	688
Tuberculosis, other than pulmonary, . . . . .	6	10	12	13	41
Cerebro-spinal meningitis, . . . . .	6	5	8	4	23
Meningitis, other than cerebro-spinal, . . . . .	1	7	3	2	13
Whooping cough, . . . . .	50	55	66	60	231
Varicella, . . . . .	65	60	94	102	321
Ophthalmia neonatorum, . . . . .	38	28	36	47	149
Anterior poliomyelitis, . . . . .	3	2	4	4	13
Mumps, . . . . .	13	11	15	10	49
Smallpox, . . . . .	4	4	6	—	14
Trachoma, . . . . .	1	2	2	—	5
Erysipelas, <sup>1</sup> . . . . .	—	—	—	—	—
Malaria, . . . . .	2	—	—	2	4
Tetanus, . . . . .	—	1	—	1	2
Leprosy, . . . . .	—	1	—	—	1

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of May, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder, .	1	-	1	Jams and jellies,	7	2	9
Breakfast foods, .	4	-	4	Lard, . . .	1	-	1
Butter, . . .	3	-	3	Malt liquors, . . .	1	-	1
Canned goods, .	7	-	7	Maple sugar, . . .	7	1	8
Cheese, . . .	1	-	1	Maple syrup, . . .	1	-	1
Cider, . . .	2	-	2	Meat products:—			
Cocoa, . . .	5	-	5	Hamburg steak,	1	1	2
Coffee, . . .	2	2	4	Sausages, . . .	-	2	2
Confectionery,	4	-	4	Milk, . . .	293	108	401
Cream, . . .	8	-	8	Non-alcoholic			
Cream of tartar, .	1	-	1	drinks, . . .	2	-	2
Drugs, . . .	72	10	82	Olive oil, . . .	7	-	7
Flavoring ex- tracts:—				Pickles, . . .	2	-	2
Almond, . . .	1	-	1	Pie filling, . . .	1	-	1
Lemon, . . .	4	-	4	Proprietary foods,	2	-	2
Peppermint, .	-	1	1	Salad dressing, . . .	2	-	2
Vanilla, . . .	8	-	8	Shrimp, . . .	1	-	1
Fruit juices, (lemon), . . .	1	-	1	Spices, . . .	19	-	19
Gelatine, . . .	3	-	3	Syrups, . . .	2	-	2
Grape juice, . . .	1	-	1	Table sauces, . . .	1	-	1
Honey, . . .	1	-	1	Tea, . . .	1	-	1
				Wine, . . .	2	1	3
				Total, . . .	482	128	610

The samples of drugs found to be adulterated were alcohol, camphor liniment, proprietary medicines, spirit of anise, spirit of camphor, spirit of nitrous ether, spirit of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Andover, Arlington, Attleborough, Barre, Beverly, Boston, Brookline, Brockton, Cambridge, Charlestown, Dartmouth, Easton, Fall River, Fitchburg, Hamilton, Haverhill, Kingston, Lawrence, Mansfield, Methuen, Milford, New Bedford, New Braintree, Newburyport, North Andover, North Attleborough, Plymouth, Quincy, Rockland, Somerville, Stoneham, Taunton, Whitman, Winchester, Worcester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Eleven convictions were secured during the month of May, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Josiah W. Beckford, . . .	Plymouth, . . .	Milk (total solids 11.30). <sup>1</sup>
2	Daniel C. Fletcher, . . .	Littleton, . . .	Milk (total solids 10.26). <sup>1,</sup> <sup>2</sup>
3	Daniel C. Fletcher, . . .	Littleton, . . .	Milk (total solids 11.80). <sup>1</sup>
4	Owen N. Johnson, . . .	No. Attleboro, . . .	Milk (total solids 11.16). <sup>1</sup>
5	Onufry Kolodziey, . . .	Taunton, . . .	Milk (total solids 11.12). <sup>1</sup>
6	Jacob Reidenbach, . . .	Kingston, . . .	Milk (total solids 7.98). <sup>1</sup>
7	Jacob Reidenbach, . . .	Kingston, . . .	Milk (total solids 9.05). <sup>1</sup>
8	William H. Smith, . . .	Attleborough, . . .	Milk (total solids 12.07). <sup>2</sup>
9	Paul Weiner, . . .	Boston, . . .	Spirit anise (trace of oil).
10	Ralph G. Perkins, . . .	Somerville, . . .	Tincture of iodine.
11	F. H. Dickinson Company, . . .	Boston, . . .	Tomato catsup (decomposed).

<sup>1</sup> Watered.

<sup>2</sup> Skimmed.

Fines imposed, \$230.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR MAY, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9681 R	Gold Gross Evaporated Milk.	Mohawk Condensed Milk Co., Rochester, N. Y., . . .	No statement of proper dilution to make standard milk. Not grape jelly.
17094	Blue Ribbon Brand Grape Jelly.	New England Conserve Co., Lynn, Mass., . . .	79.42 per cent. U. S. P. strength. 67 per cent. U. S. P. strength.
17002	Alcohol, Tincture of iodine.	F. F. Freeman Company, Boston, and Charlestown, R. G. Perkins, Somerville, Mass., . . .	Total solids, 8.80 per cent.; fat, 2.55 per cent.; contained added water.
1928-0			Total solids, 7.98 per cent.; fat, 2.40 per cent.; contained added water.
1768-0			Total solids, 9.74 per cent.; fat, 3.00 per cent.; contained added water.
1770-0			Total solids, 9.05 per cent.; fat, 2.90 per cent.; contained added water.
1770-0	Milk, . . .	Jacob Reidenbach, Plymouth, Mass., . . .	Total solids, 8.34 per cent.; fat, 2.05 per cent.; contained added water.
1872-0			Total solids, 2.79 per cent.; fat, 0.40 per cent.; contained added water and cane sugar.
1874-0			Total solids, 2.92 per cent.; fat, 0.60 per cent.; contained added water and colored.
17106			Total solids, 8.42 per cent.; fat, 2.10 per cent.; contained added water.
17107			Total solids, 11.00 per cent.; fat, 3.10 per cent.; contained added water.
17108	Milk, . . .	Patrick Doherty, North Andover, Mass., . . .	Total solids, 9.86 per cent.; fat, 2.80 per cent.; contained added water.
17111			Total solids, 11.46 per cent.; fat, 3.70 per cent.; contained added water.
17113			
17114			
q 8960	Milk, . . .	Fred W. Mears & Son, Haverhill, Mass., . . .	

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC.—Concluded.**

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.	
q 8995			Total solids, 10.48 per cent.; fat, 3.00 per cent.; contained added water and cane sugar.	
q 8998			Total solids, 10.70 per cent.; fat, 3.30 per cent.; contained added water.	
q 8999	Milk.	Willard O. Putnam, North Andover, Mass., . . .	Total solids, 10.52 per cent.; fat, 3.05 per cent.; contained added water and cane sugar.	
q 9000			Total solids, 10.64 per cent.; fat, 3.05 per cent.; contained added water.	
q 9002			Total solids, 3.36 per cent.; fat, 0.60 per cent.; colored, contained added water and cane sugar.	
1946-0	Milk,	Wm. E. Ralton, Lawrence, Mass., . . .	Total solids, 9.84 per cent.; fat, 2.70 per cent.; contained added water.	
17125	Milk,	John F. Casey, Worcester, Mass., . . .	Total solids, 10.70 per cent.; fat, 2.00 per cent.; proteins, 3.20 per cent.; skimmed milk.	

## INSPECTION OF DAIRIES.

During the month of May, 1912, 205 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Egremont, . . . . .	12	11	91.67	1	8.33
Second inspection, . . . . .	13	11	84.62	2	15.38
Gloucester, . . . . .	9	8	88.89	1	11.11
Second inspection, . . . . .	9	7	77.78	2	22.22
Third inspection, . . . . .	32	28	87.50	4	12.50
Fourth inspection, . . . . .	1	1	100.00	—	—
Great Barrington, . . . . .	5	5	100.00	—	—
Second inspection, . . . . .	7	7	100.00	—	—
Malden, . . . . .	14	9	64.29	5	35.71
Second inspection, . . . . .	1	—	—	1	100.00
Third inspection, . . . . .	10	6	60.00	4	40.00
Fifth inspection, . . . . .	5	4	80.00	1	20.00
Manchester, . . . . .	3	3	100.00	—	—
Third inspection, . . . . .	1	1	100.00	—	—
Marblehead, . . . . .	11	9	81.82	2	18.18
Second inspection, . . . . .	1	—	—	1	100.00
Third inspection, . . . . .	14	10	71.43	4	28.57
Fourth inspection, . . . . .	1	—	—	1	100.00
Rockport, . . . . .	8	5	62.50	3	37.50
Second inspection, . . . . .	4	1	25.00	3	75.00
Third inspection, . . . . .	7	6	85.71	1	14.29
Saugus, . . . . .	14	9	64.29	5	35.71
Third inspection, . . . . .	17	15	88.24	2	11.76
Sixth inspection, . . . . .	1	—	—	1	100.00
Sheffield, . . . . .	1	1	100.00	—	—
Second inspection, . . . . .	1	1	100.00	—	—
Winthrop, . . . . .	3	1	33.33	2	66.67

Total number of dairies examined, . . . . .	205
Number found to be free from objectionable conditions, . . . . .	159
Number concerning which letters were sent, . . . . .	46
Total number of conditions to which attention was called, . . . . .	132
Percentage of dairies which passed inspection, . . . . .	77.56

Included in the total number of dairies visited were 80 which had recently started in the milk-producing business and were inspected for the first time.

In addition to the above, 35 dairies were visited at which the sale of milk had been discontinued.

It was also found that of the above total number, 9 dairies shipped their product to New York City.

The names of the owners of the dairies found to be worthy of commendation follow:—

## EGREMONT.

## Class A.

Reed, Charles

## Class B.

Birdsall, R. H.	Decker, Henry *	O'Neil, William
Bradford, A. E.	Doty, S., Jr.*	Peck, Walter
Bradford, Mrs. R. H.*	Ehisted, Fred	Phillips, Alonzo * †
Brown, Henry	Loring, H. P.*	Race, R. H.*
Bruskie, J. O.* †	McGee, T.	Spurr, Charles
Bull, W. R.*	Millard, Miss Bessie	Warren, J. P.*
Burtiss, W. B.* †	Miller, A. E.	Wheeler, W. C.*

## GLOUCESTER.

## Class B.

Allen, Leonard ‡	Hagstrom, Peter * †	Merry, Charles
Amero, Michael ‡	Harvey, G. A.	Middleton, John J.* †
Andrews, Ephraim ‡	Haskell, Llewellyn ‡	Montgomery, Mrs. Hilda *
Andrews, Jacob R. ‡	Haskell, Sidney *	Nelson, John E. ‡
Andrews, Joseph W. ‡	Hibbard, Frank W. ‡	Nutton, John G. ‡
Andrews, Mrs. Mary B. ‡	Korkatti, John	Puntanen, G.
Atwater, Joseph A. ‡	Lane, George E. ‡	Rice, Herman
Babson, E. W. ‡	Lane, George W.*	Ricker, George
Carter Brothers *	Lane, G. Warren ‡	Riggs, Leonard F.* †
Cole, Thomas W. & Co. ‡	Lane, Howard P. ‡	Robertson, James ‡
Currier, Edward S. ‡	Lane, H. W. ‡	Stanley, Rufus N. §
Day, Edward L. ‡	Lufkin, Edward S. ‡	Tarr, Lewis H.
Day, Edward S. ‡	Lufkin, F. H. ‡	Younger, Edward ‡
Friend, Lemuel Jr.	Marshall, E. L. ‡	Younger, William H. ‡
Garland, Amos ‡	Marshall, William F. ‡	

The following commendable Gloucester dairies which were inspected in June, are inserted here for the sake of completeness: —

## GLOUCESTER.

## Class B.

Ahola, John ‡	Hill, Enoch *	O'Brien, John ‡
Day, E. I.	Kleimola, Gabriel * †	Young, Charles F. ‡

## GREAT BARRINGTON.

## Class A.

Shaw, Edward D.\* †

## Class B.

Baldwin, E. H.	Hall, Oscar M.* †	Owen, Charles
Ferguson, W. S.*	Hatch, J. W.* †	Pendergast, Michael * †
Hall, George	Love, Martin *	Wheeler, Frank T.
Hall, Herbert H.*	Love, William	

\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

§ Fourth inspection.

|| Reported favorably on all previous inspections.

## MALDEN.

## Class B.

Baldwin, W. W.	Haley, Mrs. Nellie J.‡	Rasmussen, A. C.
Caldwell, William	Keefe, John	Saal, Ludwig
Corrigan, E. P.‡	Leitman, Abraham ‡ †	Weiner, Max ¶
Desmond, Charles L.¶	Malden "City Farm" ‡ †	Weinstein, David ‡
Enright, M. F.	Mendelson, Benjamin	Weitzman, Mrs. E.¶
Fine, Samuel	Mirer, Samuel	Wiener, A. J.¶
Glass, Louis ‡ †		

## MANCHESTER.

## Class B.

Baker, R. and L.‡	Cheever, William
Burgess, John A.	Silva, Joseph

## MARBLEHEAD.

## Class A.

Powers, Arthur G.‡
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## Class B.

Allenspach, J.	Hathaway, Misses ‡	Peach, Fred
Bowdidge, Charles S.	Hooper, Eben L.‡	Pecker, Edwin E.‡
Drayton, H. L.	Larivee, Fred ‡	Pitman, Thomas S.‡
Foster, Frank M.‡	Little, Charles S.	Robinson, Charles ‡
Goodwin, Perley R.	Martin Sons, B. F.‡	Rodgers, L. M.
Hardwick, Henry P.	Peach, Charles	Wheeler Brothers ‡

## ROCKPORT.

## Class A.

French, Albert	Lane, Andrew ‡
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## Class B.

Evans, William H.* †	Nugent, Mrs. Mary	Poole, Nathaniel ‡
Goodwin, A.‡	Olsen, Carl J.‡	Reed, Joseph
Hodgkins, W. B.‡	Oman, Andrew	
Lane, Charles ‡	Pearson, John	

## SAUGUS.

## Class A.

Bennett, Frank P.‡
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## Class B.

Berthold, Conrad	Goldsmith, Charles E.‡	Nicholson, George F.
Burns, Mrs. E.‡	Goodrich, William H.	Penney Brothers
Chisholm, T. C.	Hatch, Anthony ‡	Penney, M. L.‡
Coburn, F. H.‡	Hawkes, Richard ‡	Prempas, Vasil
Dearden, Miss Harriet ‡	Hone, B. S.‡	Pyrah, George ‡
Edmands Brothers ‡	Howard, Miss E. J.	Saugus "Town Farm" ‡
Evans Brothers	Longfellow, Ernest ‡	Stillings, C. E.
Fiske, Frank E.‡	Metcalf, George G.‡	

\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

¶ Fifth inspection.

|| Reported favorably on all previous inspections.

## SHEFFIELD.

*Class A.*

Boardman, Levi

*Class B.*

Toby, Mrs. Ellen A.\*

## WINTHROP.

*Class B.*

Hedrington, James J.

## ACTS OF 1912, CHAPTER 112.

## RESOLVE TO PROVIDE FOR A REPORT RELATIVE TO A DEFINITE POLICY FOR THE TREATMENT OF TUBERCULOSIS.

*Resolved*, That the state board of health and the trustees of hospitals for consumptives, acting as a joint board, shall consider and report in print to the general court, not later than January first, nineteen hundred and thirteen, a definite policy for the treatment of tuberculosis in the commonwealth with special reference to the unification of all health work under one central authority and the division of responsibility as between the commonwealth and the community, giving due consideration to the relative needs of incipient and advanced cases of consumption and to the means now in use or authorized to meet the same, with any additional recommendations which may seem advisable. The members of the said joint commission shall receive no extra compensation for their services. [Approved May 21, 1912.]

ACTS OF 1912, CHAPTER 248.<sup>1</sup>

## AN ACT RELATIVE TO THE STAMPING OR BRANDING OF CARCASSES OF NEAT CATTLE, SHEEP OR SWINE SOLD OR OFFERED FOR SALE.

*Be it enacted, etc., as follows:*

SECTION 1. Carcasses of neat cattle, sheep or swine slaughtered without the commonwealth shall be deemed unfit for human food and shall not be sold or offered for sale unless they have been inspected at the time of slaughter by an official inspector, and unless, if not condemned, they have been stamped or branded by said inspector in like manner as those inspected by the United States Bureau of Animal Industry for interstate trade. By "official inspector" is meant one appointed or approved either (a) by the Bureau of Animal Industry of the United States Department of Agriculture; or (b) by the state board of health of the state in which the animals are slaughtered; or (c) by the local board of health of the city or town in which the animals are slaughtered. The stamp used by inspectors other than those of the Bureau of

\* Second inspection.

<sup>1</sup> Amended by chapter 603 of the Acts of the year 1912, to go into effect Sept. 1, 1912.

Animal Industry of the United States Department of Agriculture shall indicate in letters not less than one fourth of an inch high the name of the city or town in which the animals are slaughtered. Whoever sells or offers for sale, or has in his possession with intent to sell, a carcass, or any part thereof, required by the provisions of this section to be stamped or branded which has not been stamped or branded as herein provided, shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than sixty days, or by both such fine and imprisonment.

SECTION 2. Section one hundred and five of chapter seventy-five of the Revised Laws, as amended by section two of chapter three hundred and twelve of the acts of the year nineteen hundred and two, and by section two of chapter two hundred and twenty of the acts of the year nineteen hundred and three and by section six of chapter three hundred and twenty-nine of the acts of the year nineteen hundred and eight, is hereby further amended by striking out at the end thereof the words "unless said animal is less than six months old", — and by inserting after the word "inspected", in the sixth line, the words: — and, unless condemned, shall be stamped or branded according to the provisions of section one hundred and three of chapter seventy-five of the Revised Laws, as set forth in chapter two hundred and twenty of the acts of the year nineteen hundred and three, and as amended by chapter four hundred and seventy-one of the acts of the year nineteen hundred and nine and by section five of chapter two hundred and ninety-seven of the acts of the year nineteen hundred and eleven, — so as to read as follows: — *Section 105.* The provisions of the six preceding sections shall not apply to a person not engaged in such business, who, upon his own premises and not in a slaughterhouse, slaughters his own neat cattle, sheep or swine, but the carcass of any such animals shall be inspected, and, unless condemned, shall be stamped or branded according to the provisions of section one hundred and three of chapter seventy-five of the Revised Laws, as set forth in chapter two hundred and twenty of the acts of the year nineteen hundred and three, and as amended by chapter four hundred and seventy-one of the acts of the year nineteen hundred and nine and by section five of chapter two hundred and ninety-seven of the acts of the year nineteen hundred and eleven, by an inspector at the time of slaughter. [Approved March 14, 1912.]

#### ACTS OF 1912, CHAPTER 581.

#### AN ACT RELATIVE TO THE FURNISHING OF DRINKING WATER ON PASSENGER TRAINS OF RAILROAD CORPORATIONS.

*Be it enacted, etc., as follows:*

Section one of chapter four hundred and ninety-one of the acts of the year nineteen hundred and eleven is hereby amended by inserting after the word "car", in the first line, the words: — Excepting private cars, sleeping cars, dining cars, parlor cars, and the smoking, buffet and observation cars used in connection with the same, — by inserting after the word "passengers",

in the sixth line, the words:— Said cups shall be in a proper receptacle near the water tank and said receptacle shall be so placed as to be easily seen and shall be plainly marked as follows:—

DRINKING CUPS  
FOR USE  
ONLY IN THIS CAR  
FREE

such words to occupy a space not less than two inches wide by three inches long, and to be in clear black letters on a white background,— and by striking out all after the word “act”, in the tenth line,— so as to read as follows:— *Section 1.* Every railroad car, excepting private cars, sleeping cars, dining cars, parlor cars, and the smoking, buffet and observation cars used in connection with the same, while in use for the transportation of passengers, upon a train running thirty miles or more, shall be provided with a sufficient quantity of pure drinking water in such place or places in the car as will be convenient for the passengers, and with individual drinking cups which shall be accessible to the passengers. Said cups shall be in a proper receptacle near the water tank, and said receptacle shall be so placed as to be easily seen and shall be plainly marked as follows:—

DRINKING CUPS  
FOR USE  
ONLY IN THIS CAR  
FREE

such words to occupy a space not less than two inches wide by three inches long, and to be in clear black letters on a white background. No charge shall be made for the water or for the drinking cups. The water and cups supplied shall be subject to the supervision and approval of the state board of health; and the said board shall enforce the provisions of this act. [Approved May 11, 1912.]

ACTS OF 1912, CHAPTER 652.

**AN ACT TO REGULATE THE COLD STORAGE OF CERTAIN FOOD PRODUCTS.**

*Be it enacted, etc., as follows:*

**SECTION 1.** The term “cold storage”, as used in this act, shall be construed to mean the storage of articles of food at or below a temperature of forty degrees Fahrenheit in cold-storage or refrigerating warehouses.

The term “cold storage or refrigerating warehouse”, as used in this act, shall be construed to mean an establishment employing refrigerating machinery or ice for the purpose of refrigeration, or a place otherwise artificially cooled, in which articles of food are stored for thirty days or more at a temperature of forty degrees Fahrenheit or below.

The term “article of food”, as used in this act, shall be interpreted to

include fresh meat, fresh meat products, except in process of manufacture, fresh food fish, poultry, eggs and butter.

SECTION 2. No person, firm or corporation shall operate a cold-storage or refrigerating warehouse without a license issued by the state board of health. Any person, firm or corporation desiring such a license may make written application to the board, stating the location of its plant or plants. On receipt of the application the board shall cause an examination to be made of the sanitary condition of any such plant, and if it is found to be in a sanitary condition and otherwise properly equipped for the business of cold storage, the board shall cause a license to be issued authorizing the applicant to operate a cold-storage or refrigerating warehouse for the period of one year. The license shall be issued upon payment by the applicant of a license fee of ten dollars to the treasurer of the commonwealth. In case any warehouse licensed under the provisions of this section or any part thereof, shall be deemed by the state board of health to be conducted in an unsanitary manner, it shall be the duty of the board to close such warehouse or part thereof, until it shall be put in sanitary condition, and the board shall have power also to suspend the license in case the required changes are not made within a reasonable time. Every such licensee shall furthermore submit a quarterly report to the state board of health on a printed form to be provided by the board. The report shall be filed on or before the twenty-fifth day of January, April, July and October of each year, and it shall state the quantities of articles of food placed in cold storage during the three months preceding the first day of the said months, respectively, and also the quantities of butter and eggs held on the first day of the month in which the report is filed.

SECTION 3. No article of food intended for human consumption shall be placed in cold storage if deemed by the state board of health to be diseased, tainted or otherwise unwholesome.

It shall be the duty of the state board of health to inspect and supervise all cold storage or refrigerating warehouses in this commonwealth, and to make such inspection of the entry of articles of food therein as the board may deem necessary to secure proper enforcement of this act. The members of the board, or its duly authorized agents, inspectors or employees, shall be permitted access to such establishments and all parts thereof at all reasonable times for purposes of inspection and enforcement of the provisions of this act, or of any other provision of law relating to food products. The board may also appoint and designate such person or persons as it deems qualified to make the inspections herein required.

SECTION 4. All articles of food when deposited in cold storage shall be marked plainly with the date of receipt on the containers in which they are packed, or, if not packed in containers, on or in connection with the articles, except fish.

SECTION 5. No article of food shall be held in cold storage within this commonwealth for a longer period than twelve calendar months, except with the consent of the state board of health as hereinafter provided. The state

board of health may, upon application, grant permission to extend the period of storage beyond twelve months for a particular consignment of goods, if the goods in question are found, upon examination, to be in proper condition for further storage at the end of twelve months. The length of time for which further storage is allowed shall be specified in the order granting the permission. A report on each case in which such extension of storage may be permitted, including information relating to the reason for the action of the board, the kind and the amount of goods for which the storage period was extended, and the length of time for which the continuance was granted, shall be included in the annual report of the board.

SECTION 6. It shall be unlawful to sell, or to offer or expose for sale articles of food which have been held in cold storage without notifying persons purchasing, or intending to purchase, the same that they have been so kept by the display of a sign marked, "Cold Storage Goods Sold Here," and it shall be unlawful to represent or advertise as fresh goods articles of food which have been held in cold storage.

SECTION 7. It shall be unlawful to return to cold storage any article of food that has once been released from such storage for the purpose of placing it on the market for sale to consumers, but nothing in this section shall be construed to prevent the transfer of goods from one cold-storage or refrigerating warehouse to another, provided that such transfer is not made for the purpose of evading any provision of this act.

SECTION 8. Broken eggs packed in cans, if not intended for use as food, when deposited in cold storage shall be marked by the owners in accordance with forms prescribed by the state board of health, under the authority hereinafter conferred, in such a way as plainly to indicate the fact that they are not to be sold for food.

SECTION 9. The state board of health may make rules and regulations to secure a proper enforcement of the provisions of this act, including rules and regulations with respect to the use of marks, tags or labels and the display of signs, and may fix penalties for the breach thereof.

SECTION 10. Any person, firm or corporation violating any provision of this act shall upon conviction be punished for the first offence by a fine not exceeding one hundred dollars, and for the second offence by a fine not exceeding five hundred dollars, or, if the offence is committed by a person acting either in his individual capacity or in behalf of a firm or corporation, by imprisonment for not more than thirty days, or by both such fine and imprisonment.

SECTION 11. All acts and parts of acts inconsistent herewith are hereby repealed.

SECTION 12. This act shall take effect on the first day of September, nineteen hundred and twelve. [Approved May 27, 1912.]

ACTS OF 1912, CHAPTER 117.

**RESOLVE TO PROMOTE THE EXTERMINATION OF MOSQUITOES.**

*Resolved*, That the state board of health is hereby authorized and directed to advise local boards of health throughout the commonwealth as to the best methods of exterminating mosquitoes and to give practical demonstrations of such methods wherever the said board deems it advisable; and for this purpose there shall be allowed and paid from the treasury of the commonwealth to the state board of health a sum not exceeding one thousand dollars.  
 [Approved May 24, 1912.]

**THE CONTROL OF TUBERCULOSIS.<sup>1</sup>**

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PREPARED BY THE MASSACHUSETTS STATE BOARD OF HEALTH.

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**I. WHAT IS TUBERCULOSIS?**

TUBERCULOSIS is the most fatal of all communicable diseases. It attacks various portions of the body, but it prefers the lungs. It spares no country, no age, no occupation and no class of citizens. In the United States 150,000 human beings die every year from this disease, and the number of persons sick with it is estimated to be ten times that of those who die. Every third person who dies between the ages of fifteen and sixty dies of tuberculosis.

Tuberculosis is caused by the tubercle bacillus,—a minute microscopic parasite discovered by Robert Koch in 1882. The tubercle bacillus is a small plant, visible only under the higher powers of the microscope. It grows best at blood temperature, and it multiplies in the interior of the body. Tubercle bacilli reach the outer world chiefly in the sputum of persons suffering with pulmonary tuberculosis, and also in the milk and feces of tuberculous cows. Everybody is exposed to the danger of taking into his body the germ of tuberculosis, and many people harbor this germ for a long time without knowing it. It is the duty of every one, therefore, to take part in the fight against this common enemy.

The best way of destroying the tubercle bacillus is by burning, by boiling or by subjecting it to the influence of live steam. It is not able to withstand direct sunlight for any length of time. If chemicals are used — such as corrosive sublimate, carbolic acid solution, formaldehyde, etc. — special directions are necessary for their safe and efficient use.

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<sup>1</sup> Taken in part from a leaflet on tuberculosis issued by the German Imperial Health Office.

## II. HOW DOES INFECTION OCCUR?

Hereditary tuberculosis is rare. It is not commonly appreciated, however, that infection with tuberculosis is acquired in many instances in childhood, although the disease may not show itself until later in life. The main portals of entrance for the tubercle bacillus are the respiratory and digestive tracts. The disease-producing germs reach these tracts,—

1. *In the Inspired Air.*—Either (*a*) from the dried sputum of consumptives, in the form of dust whirled up by the wind, drafts, sweeping and beating, etc.,—oftentimes, furthermore, carried unsuspectingly on the soles of shoes or on clothes,—or (*b*) from the minute moist droplets which patients spray from the mouth during sneezing, coughing or speaking.

2. *With the Food.*—Largely through the agency of unboiled milk; perhaps occasionally by reason of insufficient meat inspection, through eating the flesh of tuberculous animals. In America this latter danger is not great inasmuch as it is our custom to cook meat thoroughly. That the drinking of unboiled milk constitutes a very real danger from bovine tuberculosis (as well as other communicable disease, such as typhoid and scarlet fever) has been shown by Park and Krumwiede ("Journal of Medical Research," December, 1911), who, as the result of a very extended series of observations as to the relation of bovine to human tuberculosis, came to the following conclusions:—

Bovine tuberculosis is practically a negligible factor in adults. It very rarely causes pulmonary tuberculosis or phthisis [consumption], which causes the vast majority of deaths from tuberculosis in man, and is the type of disease responsible for the spread of the virus from man to man.

In children, however, the bovine type of tubercle bacillus causes a marked percentage of the cases of cervical adenitis [enlarged glands of the neck] leading to operation, temporary disablement, discomfort and disfigurement. It causes a large percentage of the rarer types of alimentary tuberculosis [tuberculosis of the digestive tract] requiring operative interference, or causing the death of the child directly, or as a contributing cause in other diseases.

In young children it becomes a menace to life and causes from 6½ to 10 per cent. of the total fatalities from this disease.

On the other hand, only in the rarest of instances has consumption or tuberculosis of the lungs been found to be due to the bovine bacillus.

3. *By Means of Unclean Hands and Soiled Articles.*—For example, by the creeping of children upon the floor; grasping of soiled articles such as clothes, handkerchiefs, etc., especially if the fingers immediately

thereafter are put in the mouth (sucking the fingers, biting nails and licking the fingers in the turning of pages); by picking at the nose and other similar dirty processes; by putting in the mouth the playthings, drinking glasses, eating dishes and wind instruments which have been used by infected individuals.

Tubercle bacilli can also gain entrance to the body through injured or diseased portions of the skin or mucous membranes (unsuspected little wounds, scratches, etc.). In children tuberculosis shows itself more especially in affections of the lymph glands; for example, those of the neck or abdominal cavity; and next in importance follow the lungs, the bones and joints and membranes covering the brain.

In adults the infection takes place most frequently through the mouth, and leads to tuberculosis of the lungs,—more rarely of the throat. Invasion of the skin by the tubercle bacillus brings about skin tuberculosis or *lupus*. In most instances tuberculosis runs a long course; exceptionally the course is acute, and it is then known as “galloping consumption.”

### III. HOW CAN ONE PROTECT HIMSELF AGAINST TUBERCULOSIS?

Every human being, even the weakest and poorest, can help to protect himself against tuberculosis if he will only exercise care and self-control.

#### A. Measures to be taken against the Spread of Tuberculosis.

1. Every one, sick or well, should see to it that his sputum is properly taken care of, for one can never be sure that it does not contain tubercle bacilli. Moreover, well persons, by spitting promiscuously, may set a bad example to those who are not well.

**NEVER SPIT, THEREFORE, UPON THE FLOOR (THIS MEANS ALSO STREET CARS AND RAILROAD CARS) OR UPON THE SIDEWALKS.**

In coughing or sneezing, a handkerchief should be held before the mouth; at the same time, one's neighbor should turn his face away.

Clothing should always be kept clean, and dresses should not be allowed to drag upon the sidewalk.

The linen, the clothing, the beds and dishes of tuberculous people should not be used by others except after scalding or boiling.

Dry sweeping should be replaced by moist methods. The stirring up of dust in the house, in the workshop, and in the street should be restricted within the very smallest limits. In this connection vacuum cleaning is to be highly recommended.

Avoid restaurants and shops in which spitting upon the floor is allowed, and in which flies are numerous.

Children should be kept away from dusty workshops and localities where labor such as the beating of carpets is carried on.

2. Extreme cleanliness should be used in the keeping, as well as in the use, of food, especially that which is eaten uncooked. In this connection the rôle of flies in the transfer of infectious material to food products is to be especially emphasized.

Meat should be well cooked before using. Milk, unless beyond suspicion, should be heated to 165° (pasteurized) for thirty minutes. It should then be cooled quickly, always properly protected, and kept in as cool a condition as possible.

3. The hands, and especially the nails, the teeth, and the mouth as well, should be cleaned often and thoroughly. Decayed teeth should receive prompt attention, inasmuch as they are excellent breeding grounds for bacteria of various kinds, and thus become important foci for the extension of disease to the alimentary and respiratory tracts.

The introduction of the fingers into the mouth or nose, as well as the scratching of the face, is to be avoided.

4. As regards animal tuberculosis we need only state that in neat cattle the lungs are most likely to be affected; in hogs, the tubercle bacillus invades more especially the glands of the neck. In the former case, infection probably takes place by inspiration; in the latter, through the food, and especially through uncooked skimmed milk.

The proper method of getting rid of animal tuberculosis is as follows:—

Gradually eliminate all the tuberculous cattle, especially those with visible signs of the disease, such as tuberculous nodules in the udder; cough with loss of flesh, etc.

Animals used for the production of baby milk or for breeding purposes should be removed, if they react to the tuberculin test.

Calves should be separated from their tuberculous mothers, and should be given every opportunity for exercise in the open air.

Finally, milk and other dairy products fed to hogs should be boiled. Hogs, furthermore, should not be allowed to feed on the droppings from cattle.

It goes without saying that the stalls should be kept clean.

#### *B. Directions for Strengthening the Body.*

We can hardly hope ever to succeed in killing all existing tubercle bacilli. For this reason it is absolutely necessary that the resistance of the body should be strengthened in every way, so that the invading parasite cannot gain a foothold. The chief means for this purpose are:—

1. Simple but nourishing food should be chosen, such as pasteurized milk, cream, butter, eggs, meat, bread, oatmeal and other cereals, macaroni, rice and vegetables. Spirituous and malt liquors should be avoided.

2. The residence or the house must be one accessible to air and light, preferably outside of the city. An airy room should be chosen for the sleeping room. The windows of this room should be widely opened several times a day, and should be open throughout the night, to ensure a plentiful supply of fresh air.

3. Wear light underwear or medium weight, and put on outside wraps according to changes in the weather. Light underwear is cheaper and better.

Foolish fashions of dress, such as restrict the free movements of the body, for example, tightly fitting corsets and belts, are to be strongly condemned.

Other items of expense must not be considered until the necessary outlay for house, food and clothing has been provided for.

4. Cleanliness and order must be the watchword.

The entire body should be washed daily with water moderately cold; or the body may be rubbed down daily with a rough towel. A bath in river water or in the sea may be of great advantage.

Keep the hair and beard, teeth and mouth, as well as the nails, clean.

If it is impossible for you to breathe through the nose easily, consult your physician. Obstructions are oftentimes easily removed.

5. Try to choose a vocation which is healthful.

Use whatever protective apparatus is offered to you.

Avoid as far as possible a bent-over position. Such a position prevents a normal expansion of the lungs.

If you are an employer, take care to restrict to the greatest possible extent influences which would be harmful to your employees.

The time for work and the time for rest should be arranged in proper proportions.

6. When you are not employed in work, you should devote considerable time to the strengthening of those portions of the body which, in your work, have had the least opportunity for exercise.

Get away, if you can, from inhabited portions of your town.

Breathe deeply in the open air.

Accustom yourself to all sorts of weather in the open.

Change, as soon as possible, wet clothing and shoes.

Gymnastic exercise, especially in the open, graduated according to your strength, walks, ball playing, moderate bicycling, rowing, swimming, etc., are the best comrades in the fight against tuberculosis.

7. Go to bed early; avoid fatigue and excesses of every kind, for they will destroy in a short time what it has taken you a long time to acquire. Every excess will injure.

Finally, if your duty or occupation necessitates association with persons who are ill with tuberculosis, you must follow with care rules which are given you to prevent infection, always remembering that a person ill with tuberculosis, whose personal habits are clean and who takes care of the material which he coughs up, is a safe person to live with, and that he may attend to work without endangering his fellow workmen. If you have rented a house in which a tuberculosis individual has lived previously be sure and have it properly cleansed, disinfected and renovated. In this connection, whitewashing, repapering or painting is often-times indicated.

#### IV. RULES FOR PERSONS WHO ARE ESPECIALLY EXPOSED TO TUBERCULOSIS.

The rules which have been given above should be followed carefully by every one, but especially by those who for any reason have occasion to fear tuberculosis more than others,— weakly individuals, and especially those who have a long and thin body with a flat chest, or who come from tuberculous families; furthermore, those who have reason to believe that they have been exposed unduly to tuberculosis through association with consumptive patients (relatives, nurses and fellow workmen); or who, because of previous glandular infection, have reason to believe that they have already become infected with tuberculosis; and especially those whose occupation is dangerous, such as being exposed to different varieties of dust; and, finally, those who have suffered from diseases such as measles, whooping cough, influenza; who have chronic lung and throat disease; whose blood has become poor from any cause,— such individuals should pay especial attention to the laws of hygiene detailed above.

Any person whose body is lacking in resistance should take extreme care in the choice of an occupation. An occupation which brings one into the open air and which strengthens the powers of the body through exercise is better than one which confines the individual indoors.

Persons who have sensitive organs of respiration must not only avoid dust and dust-producing occupations, but also smoke, including tobacco smoke; and must protect themselves against cold and damp winds.

Every effort should be made to protect one's self against sudden changes of temperature and excessive muscular exercise.

Neglect of precautions against tuberculosis by single individuals endangers the common good.

## V. ADVICE TO SICK INDIVIDUALS.

If symptoms arise which make you suspect that you have chronic affection of the respiratory tract, for example, if you have recurring attacks of cough (whether dry or with sputum); if you experience recurrent pains in the neck, chest or back; continued fatigue or tendency toward weariness without previous exercise; if you have lost your color or your appetite; if you have become thin; if you become feverish, especially at night, with night sweats, even though but lightly covered with bedclothes; if you have traces of blood in the sputum, **YOU MUST CONSULT A PHYSICIAN IMMEDIATELY, AND UNDERGO A THOROUGH EXAMINATION INCLUDING AN INVESTIGATION OF THE SPUTUM AS TO THE PRESENCE OF TUBERCLE BACILLI.**

Even if your suspicion is not confirmed, still you must observe the advice given above under No. IV., for any weakened condition opens the door to tuberculosis.

If your suspicion is confirmed, your first duty is, of course, to obey the rules set down for you by your physician. **NOTHING WILL HELP YOU IF YOU ARE NOT WILLING TO FOLLOW THE GENERAL RULES OF HYGIENE, AND IF YOU WILL NOT HELP YOURSELF BY CARRYING OUT THE SPECIAL REGULATIONS MADE TO FIT YOUR CASE.**

The patient has a double duty: first, to himself, in order to become once more a useful member of society; and, secondly, by observing protective regulations, to prevent his family and others in the neighborhood from acquiring the disease.

Tuberculosis in the beginning, is curable in many instances. Advanced cases seldom get well. Success depends on early and proper treatment. Especial attention must be given to the sputum; it must not be cast upon the floor; it must not be swallowed; it should be placed in a receptacle arranged for it. The best arrangement is a spit cup which can be properly cleaned, or paper spit cups, paper napkins, or some other receptacle which can be destroyed with its contents by burning. When a paper napkin has been used, either to spit into or to wipe the mouth with, fold it carefully and put it into a paper bag, and destroy the bag with its contents at the earliest opportunity. If, in exceptional cases, the sputum must be placed in a handkerchief, then this must be thoroughly boiled before being dried.

There is no doubt that the infection can be transferred by kissing. A person who is undoubtedly a consumptive should be advised strongly against marriage. He should wait until he is cured. Tuberculous women should preferably not have children. They should not nurse

their babies, if they have them, nor should they take care of other children.

Tuberculous individuals stand the best chance of cure if they enter a properly equipped sanatorium and are under the care of a physician especially trained in this disease. In such a place, in many instances, slow but constant improvement takes place, so that, for all practical purposes, the health of the individual becomes restored, and remains so, provided that after leaving the sanatorium he takes the proper precautions to prevent a relapse.

Massachusetts is provided with four such sanatoria, one each at Rutland, Westfield, North Reading and Lakeville, to which patients may be admitted on a certificate filled out by the attending physician. Each patient is expected to pay \$4 a week, if able to do so. Otherwise, the city or town in which he has a legal settlement becomes responsible for this payment. Some cities and towns, furthermore, are provided with a hospital for tuberculous cases. Detailed information concerning hospital facilities can be obtained either from your physician, your local board of health, the State Inspector of Health for your district (see pages 200-203) or from the Board of Trustees of Hospitals for Consumptives, 3 Joy Street, Boston, Mass. It sometimes happens, however, that the State and local hospitals are full, or other conditions may prevent the patient's removal to such a sanatorium or hospital. Under these conditions it is important to bear in mind that many of the advantages of sanatorium treatment, such as fresh air, sunshine and good food can be provided for at the home of the patient. For instance, roof bedrooms, sleeping porches and window tents can be arranged oftentimes at small expense, so that effective treatment of this disease may be carried out at home. Details for such construction can be obtained from the health officials mentioned above.

## VI. THE PHYSICIAN.

The early diagnosis of tuberculosis is of the utmost importance. Even in the absence of a cough or other localizing symptoms the physician may well suspect tuberculosis if his patient suffers from such general symptoms as increasing weakness, anaemia, loss of weight and night sweats, especially if these signs and symptoms are accompanied by fever. With the presence of cough and sputum the diagnosis becomes, of course, easier, and the examination of the sputum for tubercle bacilli and shreds of lung tissue becomes imperative. Such an examination is undertaken, free of charge, by the State Board of Health and by certain municipal boards of health. Outfits for the collection of sputum for examination can be obtained from your local board of health.

In case a positive diagnosis of tuberculosis has been made, whether the specific bacilli have been detected or not, and whether the tuberculosis is pulmonary or not, the case must be reported immediately to the local board of health, not only by the physician but also by the householder, in accordance with the provisions of sections 49 and 50 of chapter 75 of the Revised Laws, which read as follows:—

SECTION 49. A householder who knows that a person in his family or house is sick of smallpox, diphtheria, scarlet fever or any other infectious or contagious disease declared by the state board of health to be dangerous to the public health shall forthwith give notice thereof to the board of health of the city or town in which he dwells. Upon the death, recovery or removal of such person, the householder shall disinfect to the satisfaction of the board such rooms of his house and articles therein as, in the opinion of the board, have been exposed to infection or contagion. Should one or both eyes of an infant become inflamed, swollen and red, and show an unnatural discharge at any time within two weeks after its birth, it shall be the duty of the nurse, relative or other attendant having charge of such infant to report in writing within six hours thereafter, to the board of health of the city or town in which the parents of the infant reside, the fact that such inflammation, swelling and redness of the eyes and unnatural discharge exist. On receipt of such report, or of notice of the same symptoms given by a physician as provided by the following section, the board of health shall take such immediate action as it may deem necessary in order that blindness may be prevented. Whoever violates the provisions of this section shall be punished by a fine of not more than one hundred dollars. But the board of health of a city or town may in its discretion, disinfect or fumigate all such premises as in the opinion of the board have been exposed to any infectious or contagious disease, at the expense of the city or town, and may employ any proper and competent person or corporation for the purpose of such disinfecting or fumigating.

SECTION 50. If a physician knows that a person whom he is called to visit is infected with smallpox, diphtheria, scarlet fever or any other disease declared by the state board of health to be dangerous to the public health, or if one or both eyes of an infant whom or whose mother he is called to visit become inflamed, swollen and red, and show an unnatural discharge within two weeks after the birth of such infant, he shall immediately give notice thereof in writing over his own signature to the selectmen or board of health of the town; and if he refuses or neglects to give such notice, he shall forfeit not less than fifty nor more than two hundred dollars for each offence.

The list of the diseases declared by the State Board of Health to be dangerous to the public health and, therefore, reportable is as follows:—

Actinomycosis.	Smallpox.
Anterior poliomyelitis.	Tetanus.
Asiatic cholera.	Trachoma.
Cerebro-spinal meningitis.	Trichinosis.
Diphtheria.	Tuberculosis.
Glanders.	Typhoid fever.
Leprosy .	Typhus fever.
Malignant pustule.	Varicella.
Measles.	Whooping cough.
Ophthalmia neonatorum.	Yellow fever.
Scarlet fever.	

Furthermore, all precautions must be taken to prevent the spread of disease to others in the immediate neighborhood of the patient, whether at home, at school or at work.

The essential thing is, of course, the proper care of the germ-laden sputum. If this excretion be properly cared for there is little reason for extraordinary restriction of the patient's freedom or movements in this community. On the other hand, patients who cannot or will not take proper care of their sputum must be placed under the strict supervision of health authorities, even to the extent of loss of liberty. See section 36 of chapter 75, Revised Laws, which follows: —

SECTION 36. If a disease which is dangerous to the public health breaks out in a town, or if a person is infected or lately has been infected with any such disease, the board of health shall immediately provide such hospital or place of reception, and such nurses and other assistance and necessaries, as is judged best for his accommodation and for the safety of the inhabitants, and the same shall be subject to the regulations of the board. The board may cause any sick or infected person to be removed to such hospital or place, if it can be done without danger to his health; otherwise the house or place in which he remains shall be considered as a hospital, and all persons residing in or in any way connected therewith shall be subject to the regulations of the said board, and, if necessary, persons in the neighborhood may be removed. When the board of health of a city or town shall deem it necessary in the interest of the public health to require a resident wage-earner to remain within such house or place, or otherwise to interfere with the following of his employment, he shall receive from such city or town during the period of his restraint compensation to the extent of three fourths of his regular wages: *provided, however,* that the amount so received shall not exceed two dollars for each working day.

Tuberculous sputum is best received into paper napkins or paper cups which can be burned. If a receptacle such as a spittoon is used, then it should contain a liquid disinfectant such as carbolic acid in 5 per cent. solution.

## VII. LOCAL BOARD OF HEALTH.

On receiving the report of the attending physician as to the presence in the community of a case of tuberculosis, the local board of health must report the case to the State Board of Health within twenty-four hours in accordance with the provisions of section 52 of chapter 75, Revised Laws, which reads as follows:—

SECTION 52. If the board of health of a city or town has had notice of a case of smallpox, diphtheria, scarlet fever or of any other disease declared by the state board of health to be dangerous to the public health therein, it shall within twenty-four hours thereafter give notice thereof to the state board of health stating the name and the location of the patient so afflicted, and the secretary thereof shall forthwith transmit a copy of such notice to the state board of charity.

If the local board fails to report the case to the State Board of Health in accordance with the provisions of the above section, then the town in which the case occurs cannot receive reimbursement for expenditure in the treatment of patients suffering with such reportable disease from the State Board of Charity in case such patient has no settlement in the city or town. The local board of health, furthermore, should send its agent at the earliest possible moment to investigate the surroundings of the tuberculous patient, and if these are found to be such that the patient cannot receive proper care, or if the patient must, under the circumstances, be a menace to his family and neighbors, he should be removed either to a local hospital or to a State sanatorium. After the removal of the patient, his quarters should be thoroughly disinfected, and in this connection it is important to bear in mind that though gaseous disinfection with formaldehyde, if properly done, is effective, as ordinarily carried out, it is far from efficient, and much greater dependence can be placed on liquid disinfectants, such as corrosive sub-limate 1 to 1,000, or carbolic acid 5 per cent., or formalin 10 per cent., followed by fresh air, sunshine, soap and water.

Local boards of health should make all possible provision for the early discovery and treatment of tuberculous patients by establishing dispensaries and isolation hospitals. In fact, local authorities are required by the following laws to furnish such accommodations:—

## ACTS OF 1911, CHAPTER 576.

## AN ACT TO PROVIDE FOR THE MAINTENANCE OF TUBERCULOSIS DISPENSARIES IN CITIES, AND TOWNS OF TEN THOUSAND INHABITANTS OR OVER.

*Be it enacted, etc., as follows:*

Every city, and every town containing a population of ten thousand or more, as determined by the latest United States census, shall establish and maintain within its limits a dispensary for the discovery, treatment, and supervision of needy persons resident within its limits and afflicted with tuberculosis, unless there already exists in such city or town a dispensary which is satisfactory to the state board of health. The said dispensaries shall be subject to the regulations of the boards of health of the cities or towns in which they are respectively situated. A city or town subject to the provisions of this act which, upon the request of the state board of health, refuses or neglects to comply with the provisions hereof, shall forfeit not more than five hundred dollars for every such refusal or neglect. [Approved June 22, 1911.]

## REVISED LAWS, CHAPTER 75.

## AN ACT RELATIVE TO THE MAINTENANCE OF HOSPITALS BY CITIES AND TOWNS.

SECTION 35. Each city shall, and each town may, and upon the request of the state board of health, shall, establish and maintain constantly within its limits one or more hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health as defined by the state board of health, unless there already exists in the city or town a hospital for the reception of persons ill with such diseases, which is satisfactory to the state board of health, or unless some arrangement which is satisfactory to the state board of health is made between neighboring cities or neighboring towns, or neighboring cities and towns, for the care of persons having such diseases. All such hospitals established and maintained by cities or towns shall be subject to the orders and regulations of the boards of health of the cities or towns in which they are respectively situated. Plans for the construction of the said hospitals shall be approved by the state board of health before the hospitals are constructed, and the state inspectors of health shall annually make such examination of said hospitals as in the opinion of the state board of health may be necessary. A city or town which upon the request of the state board of health refuses or neglects to establish and maintain such a hospital shall forfeit not more than five hundred dollars for each refusal or neglect: *provided, however,* that if, in the opinion of the boards of health of two or more adjoining cities or towns or a city and an adjoining town or towns, such hospitals can advantageously be established and maintained in common, the authorities of the said cities or towns may, subject to the approval of the state board of health, enter into such agreements as shall be deemed necessary for the establishment and maintenance of the same.

Reimbursement for such accommodations is provided for by Acts of 1911, chapter 597, amended by Acts of 1912, chapter 637, which reads as follows:—

ACTS OF 1911, CHAPTER 597.

**AN ACT TO ENCOURAGE AND PROMOTE THE BUILDING AND USE OF TUBERCULOSIS HOSPITALS IN CITIES AND TOWNS.**

**SECTION 1.** Every city or town which places its patients suffering from tuberculosis in a municipal or incorporated tuberculosis hospital in this commonwealth, or in a building or ward set apart for patients suffering from tuberculosis by a municipal or incorporated hospital in this commonwealth, shall be entitled to receive from the commonwealth a subsidy of five dollars a week for each patient who is unable to pay for his support, or whose kindred bound by law to maintain him are unable to pay for the same; but a city or town shall not become entitled to this subsidy unless, upon examination authorized by the trustees of hospitals for consumptives, the sputum of such patients be found to contain bacilli of tuberculosis, nor unless the hospital building or ward be approved by said trustees, who shall not give such approval unless they have by authority of law, or by permission of the hospital, full authority to inspect the same at all times. Said trustees may at any time withdraw their approval.

**SECTION 2.** Said trustees of hospitals for consumptives shall certify in the case of each hospital, building or ward, approved by them as provided in the preceding section the number of patients for whom the city or town is entitled to the subsidy, and upon such certification the subsidy shall be paid from the treasury of the commonwealth in the same manner in which other claims against the commonwealth are paid.

**VIII. HOW EMPLOYERS MAY GUARD THE HEALTH OF THEIR EMPLOYEES.**

1. Factories and workshops should be well ventilated, not overcrowded and free from dust. Persons who work day after day in rooms which are improperly ventilated may after a time lose weight and strength, and become ill with tuberculosis. This is especially true of a workshop where many people work side by side some of whom may at the time be suffering with tuberculosis of the lungs. One of the most important duties of an employer is to provide fresh air for his employees.

2. Suitable receptacles for spitting should be provided in all factories and workshops, the number and kind depending upon various factors; e.g., the nature of the industry, the cleanliness of the establishment, the employees, etc., — conditions to be determined by the local board of health in the town or city where the factory is located. If metal receptacles are furnished, they should be half filled with water, or, better,

should contain 1 per cent. carbolic acid, or some chlorinated lime, to prevent flies eating the sputum. They should be emptied frequently into some place where the sputum can positively do no harm, and should then be scrubbed with boiling, or hot, water containing a little carbonate of soda (washing soda). If such precautions are not taken, the sputum dries, and the dried particles containing germs of tuberculosis float about in the air. Flies may carry the germs of tuberculosis if allowed to feed on sputum. Should these germs get into the body, tuberculosis may result. On the other hand, the destruction of sputum prevents the one great means of spreading the disease.

#### IX. STATE INSPECTORS OF HEALTH.

The State Inspectors of Health are deputy officials of the State Board of Health. It is their duty to keep in touch with all local conditions affecting health, and especially with the occurrence of infectious and contagious disease in their respective districts. They are, therefore, familiar with the agencies which can be called into action in caring for those affected with tuberculosis or other diseases dangerous to the public health. The State Inspectors of Health will gladly assist citizens, physicians and local health bodies in solving difficult problems as to the control of communicable disease. The names of the State Inspectors of Health and the towns and cities under their supervision follow:—

- Health district No. 1, Dr. Adam S. MacKnight, Fall River.
- Health district No. 2, Dr. Elliott Washburn, Taunton.
- Health district No. 3, Dr. Wallace C. Keith, Brockton.
- Health district No. 4, Dr. Harry Linenthal, Boston.
- Health district No. 5, Dr. Frank L. Morse, Somerville.
- Health district No. 6, Dr. Wm. W. Walcott, Natick.
- Health district No. 7, Dr. J. Wm. Voss, Beverly.
- Health district No. 8, Dr. Wm. Hall Coon, Haverhill.
- Health district No. 9, Dr. Charles E. Simpson, Lowell.
- Health district No. 10, Dr. Lewis Fish, Fitchburg.
- Health district No. 11, Dr. Melvin G. Overlock, Worcester.
- Health district No. 12, Dr. James V. W. Boyd, Springfield.
- Health district No. 13, Dr. John S. Hitchcock, Northampton.
- Health district No. 14, Dr. Lyman A. Jones, North Adams.

*List of Cities and Towns in Massachusetts with Health District Number.*

CITY OR TOWN.	Health District Number.	CITY OR TOWN.	Health District Number.
Abington,	3	Dalton,	14
Acton,	9	Dana,	10
Acushnet,	1	Danvers,	7
Adams,	14	Dartmouth,	1
Agawam,	12	Dedham,	2
Alford,	14	Deerfield,	13
Amesbury,	8	Dennis,	1
Amherst,	13	Dighton,	2
Andover,	8	Douglas,	11
Arlington,	5	Dover,	8
Ashburnham,	10	Dracut,	9
Ashby,	10	Dudley,	11
Ashfield,	13	Dunstable,	9
Ashland,	6	Duxbury,	3
Athol,	10		
Attleborough,	2	East Bridgewater,	3
Auburn,	11	East Longmeadow,	12
Avon,	2	Eastham,	1
Ayer,	9	Easthampton,	13
Barnstable,	1	Easton,	2
Barre,	10	Edgartown,	1
Becket,	14	Egremont,	14
Bedford,	9	Enfield,	12
Belchertown,	13	Erving,	13
Bellingham,	2	Essex,	7
Belmont,	5	EVERETT,	5
Berkley,	2		
Berlin,	10	Fairhaven,	1
Bernardston,	13	FALL RIVER,	1
BEVERLY,	7	Falmouth,	1
Billerica,	9	FITCHBURG,	10
Blackstone,	2	Florida,	14
Blandford,	12	Foxborough,	2
Bolton,	10	Framingham,	6
BOSTON,	4	Franklin,	2
Bourne,	1	Freetown,	1
Boxborough,	9	Gardner,	10
Boxford,	8	Gay Head,	1
Boylston,	10	Georgetown,	8
Braintree,	2	Gill,	13
Brewster,	1	GLOUCESTER,	7
Bridgewater,	3	Goshen,	13
Brimfield,	11	Gosnold,	1
BROCKTON,	3	Grafton,	6
Brookfield,	11	Granby,	12
Brookline,	6	Granville,	12
Buckland,	13	Great Barrington,	14
Burlington,	9	Greenfield,	13
CAMBRIDGE,	5	Greenwich,	12
Canton,	2	Groton,	9
Carlisle,	9	Groveland,	8
Carver,	3		
Charlemont,	14	Hadley,	13
Charlton,	11	Halifax,	3
Chatham,	1	Hamilton,	7
Chelmsford,	9	Hampden,	12
CHELSEA,	4	Hancock,	14
Cheshire,	14	Hanover,	3
Chester,	14	Hanson,	3
Chesterfield,	13	Hardwick,	10
CHICopee,	12	Harvard,	9
Chilmark,	1	Harwich,	1
Clarksburg,	14	Hatfield,	13
Clinton,	10	HAVERHILL,	8
Cohasset,	3	Hawley,	14
Colrain,	13	Heath,	14
Concord,	9	Hingham,	3
Conway,	13	Hinsdale,	14
Cummington,	13	Holbrook,	2
		Holden,	10

*List of Cities and Towns in Massachusetts with Health District Number—Continued.*

CITY OR TOWN.	Health District Number.	CITY OR TOWN.	Health District Number.
Holland,	11	New Ashford,	14
Holliston,	6	NEW BEDFORD,	1
HOLYOKE,	12	New Braintree,	10
Hopcdale,	6	New Marlborough,	14
Hopkinton,	6	New Salem,	13
Hubbardston,	10	Newbury,	8
Hudson,	10	NEWBURYPORT,	8
Hull,	3	NEWTON,	6
Huntington,	12	Norfolk,	2
Ipswich,	7	NORTH ADAMS,	14
Kingston,	3	North Andover,	8
Lakeville,	3	North Attleborough,	2
Lancaster,	16	North Brookfield,	11
Lanesborough,	14	North Reading,	5
LAWRENCE,	8	NORTHAMPTON,	13
Lee,	14	Northborough,	6
Leicester,	11	Northbridge,	11
Lenox,	14	Northfield,	13
Leominster,	10	Norton,	2
Leverett,	13	Norwell,	3
Lexington,	9	Norwood,	2
Leyden,	13	Oak Bluffs,	1
Lincoln,	9	Oakhamp,	10
Littleton,	9	Orange,	13
Longmeadow,	12	Orleans,	1
LOWELL,	9	Otis,	14
Ludlow,	12	Oxford,	11
Lunenburg,	10	Palmer,	12
LYNN,	7	Paxton,	10
Lynnfield,	7	Peabody,	7
MALDEN,	5	Pelham,	13
Manchester,	7	Pembroke,	3
Mansfield,	2	Pepperell,	9
Marblehead,	7	Peru,	14
Marion,	1	Petersham,	10
MARLBOROUGH,	6	Phillipston,	10
Marshfield,	3	PITTSFIELD,	14
Mashpee,	1	Plainfield,	13
Mattapoisett,	1	Plainville,	2
Maynard,	9	Plymouth,	3
Medfield,	6	Plympton,	3
MEDFORD,	5	Prescott,	13
Medway,	6	Princeton,	10
MELROSE,	5	Provincetown,	1
Mendon,	6	QUINCY,	2
Merrimac,	8	Randolph,	2
Methuen,	8	Raynham,	2
Middleborough,	3	Reading,	5
Middlefield,	14	Rehoboth,	2
Middleton,	7	Revere,	4
Milford,	6	Richmond,	14
Millbury,	11	Rochester,	1
Millis,	6	Rockland,	3
Milton,	2	Rockport,	7
Monroe,	14	Rowe,	14
Monson,	12	Rowley,	8
Montague,	13	Royalston,	10
Monterey,	14	Russell,	12
Montgomery,	12	Rutland,	10
Mount Washington,	14	SALEM,	7
Nahant,	7	Salisbury,	8
Nantucket,	1	Sandisfield,	14
Natick,	6	Sandwich,	1
Needham,	6	Saugus,	7

*List of Cities and Towns in Massachusetts with Health District Number — Concluded.*

CITY OR TOWN.	Health District Number.	CITY OR TOWN.	Health District Number.
Savoy,	14	Walpole,	2
Scituate,	3	WALTHAM,	5
Seekonk,	2	Ware,	12
Sharon,	2	Wareham,	1
Sheffield,	14	Warren,	11
Shelburne,	13	Warwick,	13
Sherborn,	6	Washington,	14
Shirley,	9	Watertown,	5
Shrewsbury,	6	Wayland,	6
Shutesbury,	13	Webster,	11
Somerset,	1	Wellesley,	6
SOMERVILLE,	5	Wellfleet,	1
South Hadley,	12	Wendell,	13
Southampton,	13	Wenham,	7
Southborough,	6	West Boylston,	10
Southbridge,	11	West Bridgewater,	3
Southwick,	12	West Brookfield,	11
Spencer,	11	West Newbury,	8
SPRINGFIELD,	12	West Springfield,	12
Sterling,	10	West Stockbridge,	14
Stockbridge,	14	West Tisbury,	1
Stoneham,	5	Westborough,	6
Stoughton,	2	Westfield,	12
Stow,	9	Westford,	9
Sturbridge,	11	Westhampton,	13
Sudbury,	6	Westminster,	10
Sunderland,	13	Weston,	6
Sutton,	11	Westport,	1
Swampscott,	7	Westwood,	2
Swansea,	1	Weymouth,	3
TAUNTON,	2	Whately,	13
Templeton,	10	Whitman,	3
Tewksbury,	9	Wilbraham,	12
Tisbury,	1	Williamsburg,	13
Tolland,	12	Williamstown,	14
Topsfield,	7	Wilmington,	9
Townsend,	9	Winchendon,	10
Truro,	1	Winchester,	9
Tyngsborough,	9	Windsor,	14
Tyringham,	14	Winthrop,	4
Upton,	6	WOBURN,	9
Uxbridge,	11	WORCESTER,	11
Wakefield,	5	Worthington,	14
Wales,	11	Wrentham,	2
		Yarmouth,	1



New Series.

JUNE, 1912.

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## STATE BOARD OF HEALTH

OF

## MASSACHUSETTS.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING JUNE 1, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal In- fections Dis- eases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or n.o t classifed).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	209	67	52	18	15	—	—	—	—	—	4
Worcester, .	145,986	54	13	11	7	2	—	—	—	—	—	1
Fall River, .	119,295	35	13	20	6	6	—	—	—	—	—	—
Lowell, .	106,294	29	11	7	4	1	—	—	—	—	—	—
Cambridge, .	104,839	26	4	7	5	2	—	—	—	—	—	—
New Bedford, .	96,652	16	7	5	4	2	—	—	—	—	—	—
Lynn, .	89,336	20	4	7	4	3	—	—	—	—	—	—
Springfield, .	88,926	26	5	7	3	2	—	—	—	—	—	—
Lawrence, .	85,892	18	9	6	1	—	—	—	—	—	—	—
Somerville, .	77,236	14	2	3	3	3	—	—	—	—	—	—
Holyoke, .	57,730	13	5	5	3	1	—	—	—	—	—	—
Brockton, .	56,878	7	2	2	1	—	—	—	—	—	—	—
Malden, .	44,404	15	4	4	2	—	—	—	—	—	—	—
Haverhill, .	44,115	10	3	4	2	—	—	—	—	—	—	—
Salem, .	43,697	12	2	3	1	—	—	—	—	—	—	—
Newton, .	39,806	8	1	2	1	—	—	—	—	—	—	—
Fitchburg, .	37,826	8	1	2	1	—	—	—	—	—	—	—
Taunton, .	34,259	8	1	4	—	—	—	—	—	—	—	—
Everett, .	33,484	8	3	3	2	—	—	—	—	—	—	—
Quincy, .	32,642	9	1	2	1	—	—	—	—	—	—	—
Chelsea, .	32,452	13	1	2	—	—	—	—	—	—	—	—
Pittsfield, .	32,121	7	3	3	2	—	—	—	—	—	—	—
Waltham, .	27,834	5	1	3	2	—	—	—	—	—	—	—
Brookline, .	27,792	5	1	3	1	—	—	—	—	—	—	—
Chicopee, .	25,401	4	1	1	—	—	—	—	—	—	—	—
Gloucester, .	24,398	9	4	—	—	—	—	—	—	—	—	—
Medford, .	23,150	8	0	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	3	8	—	—	—	—	—	—	—	—	—
Northampton, .	19,431	7	3	—	—	—	—	—	—	—	—	—
Beverly, .	18,650	3	—	2	—	—	—	—	—	—	—	—
Revere, .	18,219	4	2	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	5	1	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	3	0	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	4	1	—	—	—	—	—	—	—	—	—
Peabody, .	15,721	2	1	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	1	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	3	—	2	—	—	—	—	—	—	—	—
Newburyport, .	14,949	3	3	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	3	3	0	—	—	—	—	—	—	—	—
Marlborough, .	14,579	2	0	1	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	1	—	—	—	—	—	—	—	—	—
Milford, .	13,055	—	—	1	—	—	—	—	—	—	—	—
Adams, .	13,026	3	0	—	1	—	—	—	—	—	—	—
Framingham, .	12,948	2	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	0	—	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	1	—	—	1	—	—	—	—	—	—	—
Plymouth, .	12,141	3	0	—	2	—	—	—	—	—	—	—
Webster, .	11,509	3	1	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	2	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	4	2	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	6	—	5	—	—	—	—	—	—	—	—
Winthrop, .	10,132	1	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of report- ing towns, .	2,580,430	671	191	179	70	56	14	6	2	1	7	-
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WEEK ENDING JUNE 8, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	208	55	62	17	21	6	2	-	-	1	-
Worcester, .	145,986	42	14	17	8	3	4	1	-	-	1	-
Fall River, .	119,295	37	15	18	8	3	3	1	-	-	6	-
Lowell, .	106,294	38	13	15	4	2	3	1	-	-	-	-
Cambridge, .	104,839	23	1	3	1	2	1	1	-	-	-	-
New Bedford, .	96,652	24	8	4	1	3	3	1	-	-	-	-
Lynn, .	89,336	16	5	3	2	1	1	1	-	-	-	-
Springfield, .	88,926	18	4	6	2	1	1	1	-	-	-	-
Lawrence, .	85,892	24	12	6	1	2	1	1	-	-	-	-
Somerville, .	77,236	19	3	1	1	1	1	1	-	-	-	-
Holyoke, .	57,730	15	—	4	1	1	1	1	-	-	-	-
Brockton, .	56,878	15	2	7	1	1	1	1	-	-	-	-
Malden, .	44,404	9	2	2	2	1	1	1	-	-	-	-
Haverhill, .	44,115	10	1	4	1	1	1	1	-	-	-	-
Salem, .	43,697	10	2	4	2	2	2	1	-	-	-	-
Newton, .	39,806	7	—	—	—	—	—	—	-	-	-	-
Fitchburg, .	37,826	5	—	2	2	1	1	1	-	-	-	-
Taunton, .	34,259	14	3	5	2	2	2	1	-	-	-	-
Everett, .	33,484	10	3	2	2	1	1	1	-	-	-	-
Quincy, .	32,642	10	2	4	1	1	1	1	-	-	-	-
Chelsea, .	32,452	6	2	2	1	1	1	1	-	-	-	-
Pittsfield, .	32,121	16	—	—	—	—	—	—	-	-	-	-
Waltham, .	27,834	7	2	—	—	—	—	—	-	-	-	-
Brookline, .	27,792	5	—	—	—	—	—	—	-	-	-	-
Chicopee, .	25,401	9	3	4	1	1	1	1	-	-	-	-
Gloucester, .	24,398	7	—	—	—	—	—	—	-	-	-	-
Medford, .	23,150	4	—	1	1	1	1	1	-	-	-	-
North Adams, .	22,019	7	2	—	—	—	—	—	-	-	-	-
Northampton, .	19,431	7	3	1	1	1	1	1	-	-	-	-
Beverly, .	18,650	2	1	—	—	—	—	—	-	-	-	-
Revere, .	18,219	0	—	—	—	—	—	—	-	-	-	-
Leominster, .	17,580	3	1	1	1	1	1	1	-	-	-	-
Attleborough, .	16,215	2	0	—	—	—	—	—	-	-	-	-
Westfield, .	16,044	4	—	2	—	—	—	—	-	-	-	-
Peabody, .	15,721	5	1	—	—	—	—	—	-	-	-	-
Melrose, .	15,715	7	1	1	1	1	1	1	-	-	-	-
Woburn, .	15,308	5	1	—	—	—	—	—	-	-	-	-
Newburyport, .	14,949	5	2	1	1	1	1	1	-	-	-	-
Gardner, .	14,699	2	—	—	—	—	—	—	-	-	-	-
Marlborough, .	14,579	2	0	—	—	—	—	—	-	-	-	-
Clinton, .	13,075	6	—	1	—	—	—	1	-	-	-	-
Milford, .	13,055	—	—	—	—	—	—	—	-	-	-	-
Adams, .	13,026	2	1	1	1	1	1	1	-	-	-	-
Framingham, .	12,948	6	1	1	1	1	1	1	-	-	-	1
Weymouth, .	12,895	—	—	—	—	—	—	—	-	-	-	-
Watertown, .	12,875	3	0	—	—	—	—	—	-	-	-	-
Southbridge, .	12,592	2	1	—	—	—	—	—	-	-	-	-
Plymouth, .	12,141	1	0	—	—	—	—	—	-	-	-	-
Webster, .	11,509	4	1	1	1	1	1	1	-	-	-	-
Methuen, .	11,448	5	1	1	1	1	1	1	-	-	-	-
Wakefield, .	11,404	6	3	—	—	—	—	—	-	-	-	-
Arlington, .	11,187	2	—	1	—	—	—	—	-	-	-	-
Greenfield, .	10,427	2	1	—	—	—	—	—	-	-	-	-
Winthrop, .	10,132	5	—	—	—	—	—	—	-	-	-	-

*Recapitulation.*

Total of reporting towns, .	2,580,430	703	181	193	57	57	20	8	3	-	10	3
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WEEK ENDING JUNE 15, 1912.

CITIES AND TOWNS.	Population, Census for 1910.			DEATHS FROM —									
		Reported Deaths in Each.	Deaths under Five Years.	Principal Infectious Diseases.	Tuberculosis, Pulmonary (or not classified).	Acute Lung Diseases.	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	
Boston, .	686,092	184	42	55	22	16	5	12	1	1	1	1	1
Worcester, .	145,986	40	9	38	4	4	2	—	—	—	—	—	—
Fall River, .	119,295	29	12	11	5	1	1	—	—	—	—	—	—
Lowell, .	106,294	33	11	8	3	4	4	—	—	—	—	—	—
Cambridge, .	104,839	30	13	10	4	4	4	—	—	—	—	—	—
New Bedford, .	96,652	26	9	10	3	3	3	—	—	—	—	—	—
Lynn, .	89,336	17	2	4	1	1	1	—	—	—	—	—	—
Springfield, .	88,926	19	7	5	2	2	2	—	—	—	—	—	—
Lawrence, .	85,892	32	9	12	2	2	2	8	—	—	—	—	—
Somerville, .	77,236	12	2	4	2	2	2	2	—	—	—	—	—
Holyoke, .	57,730	12	7	4	2	2	2	1	1	—	—	—	—
Brockton, .	56,878	9	1	1	1	1	1	—	—	—	—	—	—
Malden, .	44,404	7	—	1	—	—	—	—	—	—	—	—	—
Haverhill, .	44,115	14	3	3	2	2	2	1	1	—	—	—	—
Salem, .	43,697	9	1	3	1	1	1	—	—	—	—	—	—
Newton, .	39,806	9	—	—	—	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	2	1	—	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	12	5	4	3	3	3	—	—	—	—	—	—
Everett, .	33,484	8	1	3	2	2	2	1	1	—	—	—	—
Quincy, .	32,642	9	—	—	—	—	—	1	1	—	—	—	—
Chelsea, .	32,452	10	1	2	2	2	2	—	—	—	—	—	—
Pittsfield, .	32,121	11	3	—	—	—	—	—	—	—	—	—	—
Waltham, .	27,834	7	3	4	—	4	4	—	—	—	—	—	—
Brookline, .	27,792	1	—	—	2	—	—	—	—	—	—	—	—
Chicopee, .	25,401	7	4	—	1	1	1	—	—	—	—	—	—
Gloucester, .	24,398	5	—	—	—	—	—	—	—	—	—	—	—
Medford, .	23,150	6	—	—	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	4	2	—	1	1	1	—	—	—	—	—	—
Northampton, .	19,431	2	0	—	—	—	—	—	—	—	—	—	—
Beverly, .	18,650	6	—	—	2	—	—	1	—	—	—	—	—
Revere, .	18,219	4	1	—	1	—	—	—	—	—	—	—	—
Leominster, .	17,580	10	1	—	2	—	—	—	—	—	—	—	—
Attleborough, .	16,215	3	1	—	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	10	2	—	1	—	—	1	—	—	—	—	—
Peabody, .	15,721	4	1	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	4	—	—	1	—	—	1	—	—	—	—	—
Woburn, .	15,308	4	—	—	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	7	—	—	1	—	—	1	—	—	—	—	—
Gardner, .	14,699	1	1	—	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	1	0	—	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	5	1	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	5	1	—	1	—	—	—	—	—	—	—	—
Framingham, .	12,948	5	0	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	1	—	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	2	1	—	2	—	—	2	—	—	—	—	—
Plymouth, .	12,141	6	1	—	2	—	—	—	—	—	—	—	—
Webster, .	11,509	3	1	—	1	—	—	1	—	—	—	—	—
Methuen, .	11,448	3	1	—	1	—	—	1	—	—	—	—	—
Wakefield, .	11,404	2	1	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	3	1	—	1	—	—	1	—	—	—	—	—
Winthrop, .	10,132	2	1	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,580,430	661	167	173	75	50	11	3	4	-	5	2
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WEEK ENDING JUNE 22, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.		DEATHS FROM —								
		Deaths under Five Years.	Principal Infectious Diseases.	Tuberculosis, Pulmonary (or not classified).	Acute Lung Diseases.	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.	
Boston, .	686,092	194	46	69	13	26	—	—	—	—	—	
Worcester, .	145,986	50	14	8	5	2	—	—	—	6	—	
Fall River, .	119,295	29	8	9	1	5	—	—	—	—	—	
Lowell, .	106,294	32	13	13	4	3	—	—	—	—	—	
Cambridge, .	104,839	17	3	4	—	3	—	—	—	—	—	
New Bedford, .	96,652	29	10	6	1	1	—	—	—	—	—	
Lynn, .	89,336	20	3	4	1	2	—	—	—	—	—	
Springfield, .	88,926	30	6	5	—	1	—	—	—	—	—	
Lawrence, .	85,892	19	8	5	—	1	—	—	—	—	—	
Somerville, .	77,236	14	5	2	1	1	—	—	—	—	—	
Holyoke, .	57,730	16	2	2	1	—	—	—	—	—	—	
Brockton, .	56,878	18	5	2	1	—	—	—	—	—	—	
Malden, .	44,404	5	2	—	—	1	—	—	—	—	—	
Haverhill, .	44,115	11	1	3	—	—	—	1	—	—	—	
Salem, .	43,697	11	2	1	—	1	—	—	—	—	—	
Newton, .	39,806	6	0	—	—	—	—	—	—	—	—	
Fitchburg, .	37,826	6	—	2	1	—	—	1	—	—	—	
Taunton, .	34,259	10	2	3	2	1	—	—	—	—	—	
Everett, .	33,484	9	—	—	—	—	—	—	—	—	—	
Quincy, .	32,642	7	—	2	—	—	—	2	—	—	—	
Chelsea, .	32,452	10	3	3	—	—	—	—	—	—	1	
Pittsfield, .	32,121	10	—	1	1	1	—	—	—	—	—	
Waltham, .	27,834	7	1	—	—	—	—	—	—	—	—	
Brookline, .	27,792	5	—	1	1	—	—	—	—	—	—	
Chicopee, .	25,401	7	3	—	—	—	—	—	—	—	—	
Gloucester, .	24,398	4	—	—	—	—	—	—	—	—	—	
Medford, .	23,150	8	2	1	—	—	1	—	—	—	—	
North Adams, .	22,019	7	1	—	2	—	—	—	1	—	—	
Northampton, .	19,431	6	1	—	1	—	—	—	—	—	—	
Beverly, .	18,650	2	—	—	—	—	—	—	—	—	—	
Revere, .	18,219	3	—	2	2	—	1	—	—	—	1	
Leominster, .	17,580	4	—	2	2	2	—	—	—	—	—	
Attleborough, .	16,215	6	2	—	5	2	3	—	1	—	—	
Westfield, .	16,044	8	3	—	1	—	—	—	—	—	—	
Peabody, .	15,721	3	—	—	—	—	1	—	—	—	—	
Melrose, .	15,715	3	—	—	—	—	—	—	—	—	—	
Woburn, .	15,308	3	0	—	1	—	1	—	—	—	—	
Newburyport, .	14,949	3	2	—	2	1	1	—	—	—	—	
Gardner, .	14,699	3	1	—	1	1	—	—	—	—	—	
Marlborough, .	14,579	4	1	—	—	—	—	—	1	—	—	
Clinton, .	13,075	4	1	—	2	—	1	1	—	—	—	
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	
Adams, .	13,026	0	—	—	—	—	—	—	—	—	—	
Framingham, .	12,948	4	—	—	1	—	—	—	—	—	—	
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	
Watertown, .	12,875	2	2	—	—	—	—	—	—	—	—	
Southbridge, .	12,592	3	1	—	1	—	—	1	—	—	—	
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—	
Webster, .	11,509	3	1	—	—	—	—	—	—	—	—	
Methuen, .	11,448	0	—	—	—	—	—	—	—	—	—	
Wakefield, .	11,404	6	—	—	—	—	—	—	—	—	—	
Arlington, .	11,187	1	—	—	—	—	—	—	—	—	—	
Greenfield, .	10,427	6	1	—	1	—	—	1	—	—	—	
Winthrop, .	10,182	1	—	—	—	—	—	—	—	—	—	

## Recapitulation.

Total of reporting towns, .	2,580,430	673	159	169	41	63	9	6	6	1	9	2
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WEEK ENDING JUNE 29, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	165	29	58	11	28	6	1	1	—	—	—
Worcester, .	145,986	35	9	7	5	1	1	1	1	—	—	—
Fall, River, .	119,295	27	13	14	2	3	—	—	—	—	—	—
Lowell, .	106,294	36	13	14	4	1	1	—	—	—	—	—
Cambridge, .	104,839	22	4	4	1	—	—	—	—	—	—	—
New Bedford, .	96,652	23	11	10	2	—	—	—	—	—	—	—
Lynn, .	89,336	12	2	1	1	—	—	—	—	—	—	—
Springfield, .	88,926	29	6	9	4	1	—	—	—	—	—	—
Lawrence, .	85,892	19	8	5	—	—	—	—	—	—	—	—
Somerville, .	77,236	22	3	3	2	—	—	—	—	—	—	—
Holyoke, .	57,730	12	6	5	2	—	—	—	—	—	—	—
Brockton, .	56,878	10	2	2	—	—	—	—	—	—	—	—
Malden, .	44,404	11	3	—	—	—	—	—	—	—	—	—
Haverhill, .	44,115	6	3	3	1	—	—	—	—	—	—	—
Salem, .	43,697	14	—	—	—	—	—	—	—	—	—	—
Newton, .	39,806	11	2	—	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	7	2	1	1	—	—	—	—	—	—	—
Taunton, .	34,259	11	1	6	2	—	—	—	—	—	—	—
Everett, .	33,484	6	2	1	—	—	—	—	—	—	—	—
Quincy, .	32,642	0	—	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	13	3	2	1	—	—	—	—	—	—	—
Pittsfield, .	32,121	5	1	2	2	—	—	—	—	—	—	—
Waltham, .	27,834	7	2	1	1	—	—	—	—	—	—	—
Brookline, .	27,792	8	1	1	—	—	—	—	—	—	—	—
Chicopee, .	25,401	6	5	3	1	—	—	—	—	—	—	—
Gloucester, .	24,398	6	—	2	—	—	—	—	—	—	—	—
Medford, .	23,150	2	—	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	6	3	5	2	—	—	—	—	—	—	—
Northampton, .	19,431	7	2	5	2	—	—	—	—	—	—	—
Beverly, .	18,650	4	—	1	1	—	—	—	—	—	—	—
Revere, .	18,219	0	—	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	2	—	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	1	—	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	6	3	5	3	—	—	—	—	—	—	—
Peabody, .	15,721	2	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	5	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	5	0	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	2	—	1	—	—	—	—	—	—	—	—
Gardner, .	14,699	8	—	1	—	—	—	—	—	—	—	—
Marlborough, .	14,579	1	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	1	—	—	—	—	—	—	—	—	—
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	3	1	1	1	—	—	—	—	—	—	—
Framingham, .	12,948	4	1	1	—	—	1	—	—	—	—	—
Weymouth,	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	5	1	1	—	—	1	—	—	—	—	—
Southbridge, .	12,592	1	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	1	—	—	—	—	—	—	—	—	—	—
Webster, .	11,509	4	0	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	—	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	1	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	2	—	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	1	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,569,026	603	146	170	51	50	12	6	3	-	6	1
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JUNE 1, 8, 15, 22 AND 29, 1912.**

DISEASE.	Place.	WEEK ENDING —				
		June 1.	June 8.	June 15.	June 22.	June 29.
Cerebro-spinal meningitis.	Boston, . . .	—	2	—	—	1
	Worcester, . . .	—	1	—	—	—
	Lowell, . . .	—	—	1	—	1
	New Bedford, . . .	1	—	1	—	—
	Lynn, . . .	—	—	—	1	—
	Haverhill, . . .	1	1	—	1	1
	Plymouth, . . .	—	—	1	—	—
	Greenfield, . . .	1	—	—	—	—
	Framingham, . . .	—	—	—	1	—
Erysipelas, . . .	Boston, . . .	1	2	2	1	1
	Haverhill, . . .	—	—	—	1	—
	Taunton, . . .	—	1	—	—	1
	Everett, . . .	—	1	—	—	—
Influenza, . . .	Boston, . . .	—	—	—	1	—
Puerperal fever, . .	Boston, . . .	1	—	—	2	—
	Fall River, . . .	1	—	1	—	—
	Lawrence, . . .	—	—	2	2	—
	Brockton, . . .	—	1	—	—	—
Diarrhoeal diseases, . .	Boston, . . .	5	11	6	12	6
	Fall River, . . .	5	3	3	2	8
	Worcester, . . .	—	—	—	1	—
	Lowell, . . .	—	—	1	2	5
	Cambridge, . . .	—	—	—	1	—
	New Bedford, . . .	—	—	2	1	6
	Springfield, . . .	3	2	2	3	3
	Lawrence, . . .	1	2	—	1	2
	Holyoke, . . .	—	2	1	—	1
	Brockton, . . .	—	1	—	—	1
	Haverhill, . . .	—	—	—	—	1
	Taunton, . . .	1	—	—	—	1
	Chicopee, . . .	—	2	—	—	1
	Northampton, . . .	1	—	—	—	—
	Gardner, . . .	—	1	—	—	—
	Webster, . . .	—	1	—	—	—
Meningitis (other than cerebro-spinal), . .	Everett, . . .	—	—	—	—	1
	Marlborough, . . .	1	—	—	—	—
	Webster, . . .	—	1	—	—	—
	Methuen, . . .	—	1	—	—	—

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

## CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF JUNE 1, 8, 15, 22 and 29, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —					
	June 1.	June 8	June 15.	June 22.	June 29.	Total.
Diphtheria, . . . . .	84	98	77	95	69	423
Measles, . . . . .	763	840	670	496	510	3,279
Scarlet fever, . . . . .	63	47	56	64	63	293
Typhoid fever, . . . . .	38	40	37	38	29	182
Tuberculosis, pulmonary (or not classified), . . . . .	157	156	131	152	135	731
Tuberculosis, other than pulmonary, . . . . .	12	9	10	10	11	52
Cerebro-spinal meningitis, . . . . .	4	4	—	4	6	18
Meningitis, other than cerebro-spinal, . . . . .	1	2	—	4	—	7
Whooping cough, . . . . .	33	46	24	33	28	164
Varicella, . . . . .	53	57	42	26	52	230
Ophthalmia neonatorum, . . . . .	31	35	12	44	46	168
Anterior poliomyelitis, . . . . .	4	3	1	6	2	16
Mumps, <sup>1</sup> . . . . .	10	12	11	6	4	43
Smallpox, . . . . .	2	3	4	10	7	26
Trachoma, . . . . .	—	—	1	—	1	2
Erysipelas, <sup>1</sup> . . . . .	—	—	—	1	—	1
Malaria, . . . . .	1	3	1	1	3	9
Tetanus, . . . . .	—	—	1	1	2	4
Malignant pustule, . . . . .	—	1	—	—	—	1
Leprosy, . . . . .	—	—	1	—	1	2

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of June, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	1	1	2	Milk, . . .	341	169	519
Canned goods, . . .	2	-	2	Molasses, . . .	1	-	1
Coffee, . . .	-	1	1	Non-alcoholic drinks, . . .	1	1	2
Condensed milk, . . .	-	2	2	Olive oil, . . .	5	-	5
Cream, . . .	2	-	2	Pickles, . . .	1	-	1
Drugs, . . .	71	14	85	Salad dressing, . . .	1	-	1
Eggs, . . .	9	8	17	Table sauces, . . .	3	-	3
Extract of vanilla, . . .	2	-	2	Vinegar, . . .	1	3	4
Fruit juices, . . .	1	-	1				
Honey, . . .	1	-	1				
Horse-radish, . . .	1	-	1				
Jams and jellies, . . .	7	-	7				
Meat products:—				Total, . . .	454	201	664
Hamburg steak, . . .	1	-	1				
Sausage, . . .	1	2	3				
Tripe, . . .	1	-	1				

The samples of drugs found to be adulterated were alcohol, spirit of anise, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were : Arlington, Boston, Bridgewater, Cambridge, Chelsea, Easthampton, Everett, Fall River, Hadley, Haverhill, Holyoke, Hudson, Ipswich, Lawrence, Lexington, Littleton, Lynn, Malden, Marlborough, Medford, Melrose, New Bedford, Newburyport, Northampton, North Andover, North Westport, Reading, Revere, Rockport, Saugus, Somerville, Springfield, Stoughton, Swampscott, Wakefield, Watertown, Westfield, Winchester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Six convictions were secured during the month of June, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Patrick Doherty, . . . .	North Andover,	Milk (total solids 8.34). <sup>1</sup>
2	Patrick Doherty, . . . .	North Andover,	Milk (total solids 8.42).
3	Willard O. Putnam, . . . .	North Andover,	Milk (total solids 3.36). <sup>2</sup>
4	Louis P. Salagar, . . . .	Quincy, . . . .	Dr. James' one-minute cure (57 per cent. alcohol not on package).
5	Isaiah Webster, . . . .	Haverhill, . . . .	Milk (total solids 10.94). <sup>1</sup>
6	Joel Weiner, . . . .	Boston, . . . .	Tincture of iodine (made up with commercial wood alcohol).

<sup>1</sup> Watered.

<sup>2</sup> Orange color.

Fines imposed, \$330.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR JUNE, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
2200-O	"Sesco, A New European Drink."	A. Sesser & Co., Malden, Mass.,	Preserved with salicylic acid.
17343	Spirit of anise,	A. F. Glesmann, Holyoke, Mass.,	Contains practically no anise oil.
2126-O	Tincture iodine,	Ideal Pharmacy, Boston, Mass.,	Contained wood alcohol.
17369	Spirit of peppermint,	W. E. Greene, Northampton, Mass.,	{ 38 per cent. U. S. P. strength. Total solids, 11.68 per cent.; fat, 3.70 per cent.;
q 9035	Milk,	Ira Cheney, Saugus, Mass.,	{ contained added water.
9983 R	Milk,	Geo. E. Munroe, Saugus, Mass.,	Total solids, 10.94 per cent.; fat, 2.40 per cent.; pro-
		W. K. Hutchinson, Arlington, Mass.,	teins, 3.23 per cent.; skimmed milk.
17291	Milk,	Manuel Azvado, North Westport, Mass.,	Total solids, 11.12 per cent.; fat, 3.60 per cent.;
2138-O	Milk,	Frank Almeida, Tiverton, R. I.,	contained added water.
q 9094	Milk,	Isaiah Webster, Haverhill, Mass.,	Total solids, 11.42 per cent.; fat, 2.60 per cent.; pro-
q 9095	Milk,		teins, 3.16 per cent.; skimmed milk.
q 9096	Milk,	H. P. Hood & Sons, Boston, Mass.,	Total solids, 11.76 per cent.; fat, 3.75 per cent.;
55 S	Milk,		contained added water.
q 9108	Milk,		Total solids, 10.66 per cent.; fat, 3.50 per cent.;
q 9109	Milk,		contained added water.
q 9110	Milk,		Total solids, 10.82 per cent.; fat, 3.20 per cent.;
q 9111	Milk,		contained added water.
q 9112	Milk,		Total solids, 11.94 per cent.; fat, 3.05 per cent.;
q 9113	Milk,		proteins, 3.21 per cent.; skimmed milk.
			Total solids, 11.62 per cent.; fat, 3.75 per cent.;
			contained added water.
			Total solids, 11.22 per cent.; fat, 3.65 per cent.;
			contained added water.
			Total solids, 11.08 per cent.; fat, 3.50 per cent.;
			contained added water.
			Total solids, 11.40 per cent.; fat, 3.90 per cent.;
			contained added water.
			Total solids, 12.08 per cent.; fat, 4.10 per cent.;
			contained added water.
			Total solids, 10.94 per cent.; fat, 3.40 per cent.;
			contained added water.

2206-O	Milk,	Scott E. Stevens, Rockport, Mass.,	Total solids, 10.82 per cent.; fat, 2.35 per cent.; proteins, 2.93 per cent.; skimmed milk.
17380			Total solids, 10.30 per cent.; fat, 3.10 per cent.; contained added water.
17381			Total solids, 10.26 per cent.; fat, 3.10 per cent.; contained added water.
17382			Total solids, 10.30 per cent.; fat, 3.20 per cent.; contained added water.
17383			Total solids, 10.30 per cent.; fat, 3.10 per cent.; contained added water.
17384	Milk,	Marian Zakszewski, North Hadley, Mass.,	Total solids, 10.26 per cent.; fat, 3.20 per cent.; contained added water.
17385			Total solids, 10.54 per cent.; fat, 3.40 per cent.; contained added water.
17386			Total solids, 10.60 per cent.; fat, 3.40 per cent.; contained added water.
17387			Total solids, 10.56 per cent.; fat, 3.50 per cent.; contained added water.
17388			Total solids, 10.56 per cent.; fat, 3.40 per cent.; contained added water.

## INSPECTION OF DAIRIES.

During the month of June, 1912, 241 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Amherst, . . .	6	5	83.33	1	16.67
Second inspection, . . .	6	6	100.00	—	—
Third inspection, . . .	7	7	100.00	—	—
Ashburnham, . . .	1	—	—	1	100.00
Belchertown, . . .	10	8	80.00	2	20.00
Second inspection, . . .	9	7	77.77	2	22.23
Third inspection, . . .	5	3	60.00	2	40.00
Fourth inspection, . . .	5	5	100.00	—	—
Chicopee, . . .	3	3	100.00	—	—
Second inspection, . . .	2	2	100.00	—	—
Fourth inspection, . . .	2	2	100.00	—	—
Gloucester, . . .	2	1	50.00	1	50.00
Second inspection, . . .	2	2	100.00	—	—
Third inspection, . . .	4	3	75.00	1	25.00
Granby, . . .	11	8	72.73	3	27.27
Second inspection, . . .	11	9	81.82	2	18.18
Third inspection, . . .	9	8	88.89	1	11.11
Fourth inspection, . . .	28	26	92.86	2	7.14
Hadley, . . .	6	3	50.00	3	50.00
Second inspection, . . .	6	5	83.33	1	16.67
Holyoke, . . .	—	—	—	—	—
Second inspection, . . .	1	1	100.00	—	—
Third inspection, . . .	1	1	100.00	—	—
Fourth inspection, . . .	11	9	81.82	2	18.18
Southampton, . . .	8	4	50.00	4	50.00
Second inspection, . . .	2	1	50.00	1	50.00
Third inspection, . . .	11	8	72.73	3	27.27
South Hadley, . . .	11	9	81.82	2	18.18
Second inspection, . . .	3	3	100.00	—	—
Third inspection, . . .	11	7	63.64	4	36.36
Fourth inspection, . . .	20	20	100.00	—	—
Sunderland, . . .	—	—	—	—	—
Second inspection, . . .	3	2	66.67	1	33.33
Westfield, . . .	4	3	75.00	1	25.00
Second inspection, . . .	2	2	100.00	—	—
Third inspection, . . .	1	1	100.00	—	—
Whately, . . .	14	11	78.57	3	21.43
Second inspection, . . .	3	2	66.67	1	33.33

Total number of dairies examined, . . . . .	241
Number found to be free from objectionable conditions, . . . . .	197
Number concerning which letters were sent, . . . . .	44
Total number of conditions to which attention was called, . . . . .	133
Percentage of dairies which passed inspection, . . . . .	81.74

Included in the total number of dairies visited were 76 which had recently started in the milk-producing business and were inspected for the first time.

In addition to the above, 41 dairies were visited at which the sale of milk had been discontinued.

With the exception of the Ashburnham and Gloucester dairies all of the milk produced in the above-named towns was sold in Holyoke.

The names of the owners of the dairies found to be worthy of commendation follow:—

#### AMHERST.

##### *Class B.*

Busby, Mrs. E.* †	Hillman, F. D.*	Sanderson, W. H.†
Cole, W. D.	Hobart, F. A.*	Sherman, W. H.
Drosdell, Martin	Hobart, George F.† †	Smith, G. E.†
Eastman, Edward B.†	Ives, Frank T.	Stiles, Charles E.†
Haywood, Walter H.†	Keyes, M. A.*	Taylor, L. H.*
Hendricks, J. A.	Lowe, D. H.*	Wiley, Charles E.†

#### BELCHERTOWN.

##### *Class B.*

Allen, Roswell	Hurlburt, J. W.†	Pinski, Joseph §
Beaulieu, Louis*	Jenks, Arthur L.	Shumway, E. F.†
Bissel, F. J.	Ketchen, H. B.	"Town Farm" §
Engleman, Otto P.* †	Lamson, A. F. & H. M.	Underwood, A. C. §
Gardner, Joseph *	Mansfield, James *	Weston, R. L.†
Gay, E. E.*	Marcel, Frank * †	Witt, George
Giroux, Louis §	McKillop, Henry §	Witt, Henry
Hamilton, Mrs. Harriet J.*	Peeso, E. R.	

#### CHICOPEE.

##### *Class B.*

Bernosky, A.	Schauer, J.	Steadman, A. F.
Blanchard, John T.§	Shea, Estate of Patrick §	Stone, W. F.*
Paul, Oscar * †		

#### GRANBY.

##### *Class A.*

Prentiss, M. P. § ||

##### *Class B.*

Baker, Henry §	Ferry, Clifford W. §	Moody, William L. §
Barnes, Dexter R. §	Forwood, W. F. §	Morris, Lewis
Benson, W. S. §	French, R. A. †	Nash, Charles E. §
Berud, Bruno	Fugler, Leon	Nutting, Dwight §
Bliss, J. O.*	Gelineau, Charles	Racine, Lucien §
Bray, James A. §	Gill Brothers	Randall, Charles H. §
Bryant, Lewis	Goldthwait, Charles H. §	Robert, E. §
Cleveland, H. A. * †	Goldthwait, H. A. †	Smith, Edward *
Collins, William †	Graves, Frank §	Smith, George R. §
Corture, Homer † †	Horteal, Alfred P. *	Taylor, Charles N. †
Crevier, Rev. Charles §	Ingham, J. L. †	Taylor, Horace S. §
Davenport, L. E. †	Isbell, Zavier § †	Taylor, Leon W. §
Dewitte, B. F. §	Lyman, Frank M. * †	Taylor, W. A.
Dressel, Mrs. Elizabeth *	Malone, M. J.	Turgeon, A. §
Dufresne, Ulrich *	McGrath, Michael F. §	Walls, M. J. C. †
Duteau, David *	Moody, Henry H. §	Williams, Estate of Watson §
Easton, H. L.*		

\* Second inspection.

§ Fourth inspection.

† Reported favorably on first inspection.

|| Reported favorably on all previous inspections.

‡ Third inspection.

## HADLEY.

## Class A.

Barlow, George W.  
Beebe, S. W.\*  
Dwyer, John \*

Morton, E. C.  
Pratt, Carl  
Ryan, Patrick \*

West, H. C.\*  
West, L. W.\*

## HOLYOKE.

## Class A.

Goodyear, George L. § ||

Whiting, William F. §

## Class B.

Bender, Fred §  
Bluemer, Charles \*  
Bray, Thomas A. §

Crafts, L. D. §  
Humeston, Thomas R. §  
Mareil, Francois ‡ ||

Moss, Frank §  
Tatro, Albert §  
Wilson, N. S.

## SOUTHAMPTON.

## Class B.

Crandall, M. G.  
Deptela, Joseph ‡  
Gorton, George A. ‡  
Holub, John \*  
Jenks, George M. ‡

Jones, J. A.  
Klopfenstein, Peter ‡  
Michael, Joseph  
Parsons, W. A. ‡ ||

Searles, O. M. ‡ ||  
Sheldon, Edward S. ‡  
Swanson, Alfred ‡  
Turner, George

## SOUTH HADLEY.

## Class B.

Alvord, Lewis A. ‡  
Asquith, Alfred ‡  
Bagg, Earl H. A. ‡  
Bemillard, Henry  
Boubonnais, A.  
Boyington, J. A.  
Bray, S. G.  
Butler, Adolf \*  
Day, I. N. §  
Dressel, Henry §  
Eastland, L.  
Fitzgerald, John J. ‡  
Gagne, A. § ||

Judd, Charles A. §  
Judd, Myron H. §  
Judd, Otis A. §  
LaFrance, L. M.  
Lamb, George E. §  
Legrand, Frank §  
Long, P. J. §  
Lyman, Eugene H. §  
Lyman, John E. ‡  
Malanosky, John \*  
Malenowski, Alex. §  
Mellen, James C. § †  
Menard, William §

Moody, Victor H.  
Mulvena, J.  
Pittroff, John  
Robiniski, V. §  
Shumway, E. M. \*  
Smith, Arthur D. § †  
Smith, Ellis R. §  
Smith, Newton §  
Spofford, W. S. §  
Strong, Frederick §  
Thompson, Wm. A. ‡  
"Town Farm" ‡  
Zass, Hyman §

## SUNDERLAND.

## Class A.

Smith, George P. \* †

## Class B.

Crocker, Alpheus \*

\* Second inspection.

§ Fourth inspection.

† Reported favorably on first inspection.

|| Reported favorably on all previous inspections.

‡ Third inspection.

## WESTFIELD.

*Class B.*

Adzner, George  
Bennett, E. S.\*

Cady, M.  
Lumbello Brothers

Talmadge, W. H.† ||  
Tefts, Joseph \*

## WHATELY.

*Class B.*

Bardwell Brothers  
Crafts, Mrs. Helen L.  
Crafts, W. P.  
Dickinson, Daniel \*  
Dickinson, George E.\*

Dickinson, H. R.  
Ellis, L. H.  
Johnson, H.  
Melga, Joseph

Sanderson, G. R.  
Scott, Frank O.  
Simasky, Peter  
Stefain, S.

BRILL'S DISEASE.<sup>1</sup>

In view of the recent report of Drs. Anderson and Goldberger, of the United States Hygienic Laboratory at Washington, positively identifying so-called Brill's disease with Mexican typhus fever, it becomes the duty of the medical profession at large and of public health authorities to take cognizance of the fact that typhus fever, even though it be of a type far less virulent than that which has occurred from time to time in this country in epidemic form, is now endemic in certain cities of the United States.

As but a very small number of physicians are familiar with this disease, they are referred to Dr. Brill's various papers on the subject, in which a total of 255 cases are studied, and also to that of Dr. Louria of Brooklyn, who reported observations on 18 cases. Detailed references are given below. Dr. Brill's general description of the disease is as follows:—

It begins rather suddenly, often by a distinct chill or chilly sensation. This is followed by general body pains and a headache of increasing agonizing severity. Fever develops quickly, the temperature reaching its maximum on the third day, after which it remains fairly constant, averaging between 103 and 104, occasionally as high as 106.

The patients are much prostrated, and, in some, apathy is a prominent feature. On the fifth or sixth day of the disease an eruption appears, which is rather characteristic and differentiates the disease from most other infectious disease. This eruption is fairly profuse, but discrete, consisting of a maculo-papular rash, dull red in color, erythematous in character; the spots are irregular in outline, though usually ovoid, 2 to 4

\* Second inspection. † Third inspection. || Reported favorably on all previous inspections.

<sup>1</sup> Reprinted from Monthly Bulletin of Department of Health of the city of New York, May, 1912.

millimeters in diameter. Under pressure a spot may be caused to fade, but it cannot be obliterated, thus showing an evident escape of some of the blood contents of the capillaries into the surrounding dermal tissues. Sometimes the spots become distinctly hemorrhagic (*petechiæ*). They appear on the trunk and extremities, even, rarely, on the palms and soles. The eruption is never profuse, as in measles, sometimes even being scanty, then showing less than one hundred individual spots, which may be fairly well scattered over the trunk, arms and buttocks, and along the sides of the thighs. The eruption is permanent until the end of the disease; it does not appear in crops, but develops and reaches its full afflorescence within twenty-four hours after the first spots appear.

The disease lasts twelve to fourteen days, when the fever suddenly declines, in many cases with a critical fall in temperature, which may come to normal within twelve hours; in others, with a rapid lysis within thirty-six hours, and in a few, with lysis extending over a period of sixty hours. With the fall in temperature the agonizing headache disappears, the spots rapidly fade, leaving within a few hours only brownish-yellow stains on the skin, sometimes disappearing altogether within twenty-four hours thereafter. Convalescence is speedy. In a few cases rigidity of the neck and Kernig's phenomena appear. The urine in most cases shows a trace of albumin and hyalogramular casts. The white blood count averages 11,000 cells. The blood shows no power of agglutinating any of the organisms of the typhoidal group. Blood cultures are absolutely negative.

The disease having been studied principally at Mt. Sinai Hospital, where there is a great preponderance of Russians, showed a majority of cases among patients of that race. It is, by common consent, largely a disease of the very poor and of the personally unclean. Dr. Brill has seen but two cases among the better classes. Children are but rarely affected, the age of most common occurrence being from twenty to forty years. The sexes were about equally affected. There seems to be no distinct seasonal incidence. An autopsy on the one fatal case in Dr. Brill's series showed nothing characteristic, but only congestion and general parenchymatous degeneration of the organs, such as may occur in any acute infectious disease. The prognosis may be inferred from the fact that but a single death occurred in Dr. Brill's series of 255 cases.

**THE IDENTITY OF BRILL'S DISEASE AND TYPHUS FEVER.<sup>1</sup>**

In the United States Public Health Reports, Feb. 2, 1912, Drs. Anderson and Goldberger stated that they had succeeded in inoculating a rhesus monkey with defibrinated blood, given intraperitoneally, and obtained from a patient at the Mt. Sinai Hospital who had been ill seven days with Brill's disease. Ten days later the monkey's temperature began to rise, reaching its maximum six days thereafter, and remaining high until the eleventh day of the fever, when it subsided by a rapid lysis and reached normal fourteen days after the rise began. It may be stated that this fever curve is all that is suggestive of the disease in the lower monkeys, and by itself would not be free from criticism but for the further fact that such an attack has been shown by the experimenters to render the monkey absolutely immune, not only to inoculation with blood from monkeys inoculated with Brill's disease, but also to inoculation with the blood of human beings and monkeys suffering from Mexican typhus. Brill's disease has now been carried through some fifteen generations of monkeys, all of whom exhibited practically the same phenomena as the first. These monkeys, transported to Mexico, could not be inoculated with Mexican typhus, although among an equal number of normal monkeys, used as controls, not one failed to exhibit the typical temperature curve following inoculation. On the other hand, monkeys that had gone through a siege of Mexican typhus could in no instance be inoculated with Brill's disease, while an equal number of normal monkeys all proved susceptible to it. The incubation of Brill's disease in monkeys varies from six to seventeen days. Drs. Anderson and Goldberger conclude from their experiments that the disease described by Brill is identical with the typhus fever of Mexico, and, inasmuch as the New York strain is undoubtedly of European origin, we may also conclude that the typhus of Europe and the tarbardillo, or typhus fever of Mexico, are identical.

**THE TRANSMISSION OF TYPHUS FEVER.**

Nicolle, Comte and Conseil were the first to demonstrate the transmission of typhus fever by an intermediary host. In September, 1909, they reported the successful transmission of the disease from one bonnet monkey (*M. Sinicus*) to two others by means of the body louse (*Pediculi vestimentorum*). In their thesis they showed that body lice that had bitten an infected monkey were capable of transmitting typhus fever at

<sup>1</sup> Reprinted from Monthly Bulletin of Department of Health of the city of New York, May, 1912.

some time between the first and seventh day thereafter. Independently, Anderson and Goldberger came to the same conclusion, as did also, later, Ricketts and Wilder. In the Public Health Reports of March 1, 1912, Anderson and Goldberger further report in regard to the transmission of the disease as follows:—

1. The body louse (*Pediculi vestimentorum*) may become infected with typhus. The virus is then contained in the body of the infected louse, and is transmissible by the subcutaneous injection of the crushed insect or by its bite.
2. The head louse (*Pediculus capititis*) may become infected with typhus. The virus is contained in the body of the infected louse, and may be transmitted by subcutaneous injection of the crushed insect, and, we believe, also by its bite.

These conclusions were the result of experiments conducted in Mexico. It may be further stated that one of the investigators himself accidentally contracted the disease from the bite of an infected body louse, which crawled on to his arm from a monkey he was about to infect and bit him before he could remove it.

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## HISTORY OF TYPHUS FEVER.<sup>1</sup>

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In the days of Hippocrates the term "typhus" was applied to a condition characterized by stupor and delirium, and for centuries later typhus fever was confounded with several other diseases more or less similar. Still, from the descriptions of various epidemics, contained in the writings of many of the older authors, we can clearly recognize that it existed at a very early period. The earlier accounts describe epidemics in the sixteenth century in France, Italy and Hungary.

The term "typhus fever" was apparently first applied to the disease by De Sauvages, in 1760, and it was probably first described by Fracastorius of Verona, who witnessed epidemics in Italy in 1505 and 1528. He noted its association with famine and war, commented upon its contagiousness, and described its eruption as "petechial" in character. Thus the name "petechial fever" came into general use. In 1542 there was an extensive epidemic to which the name *morbus hungaricus* was given.

### EARLY EPIDEMICS.

In England during the sixteenth century it received the name of the "black assize," from the fact that all the court officials at Oxford contracted the disease from prisoners brought before them for trial. The name "jail fever" was from that time also used as a synonym, and, from the prevalence of typhus in camps and armies, the names "camp" and "military" fever came into general use.

In the early part of the seventeenth century there were many epidemics, and the disease visited nearly every country in Europe.

In the eighteenth century it was widely prevalent, and the estimates given of the numbers who died from it are simply appalling. For example, it is stated on excellent authority that 1,000,000 persons perished in Great Britain and 30,000 in Ireland during this period. It was at this time, however, confounded with relapsing and typhoid fevers, and although some writers evidently did recognize it as a clinical entity, there was no general acceptance of their views.

During the years 1812 and 1813 occurred perhaps the greatest epidemic ever known, and, attacking the dispirited army of Napoleon during its retreat from Moscow, the disease caused as many deaths as did the rigor of the climate and the bullets of the Russians. From 1815 to 1846 it seems to have been rare, except in Great Britain and Ireland. During the Crimean War (1854-55) an epidemic occurred at Sebastopol, involv-

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<sup>1</sup> Reprinted from Monthly Bulletin of Department of Health of the city of New York, May, 1912.

ing both the allied forces and those of the besieged. The cases were more numerous and the fatalities greater in number among the French than among the English troops. This is said to have been due to the better sanitary conditions existing in the camps of the latter. During the Turko-Russian war of 1878 typhus fever prevailed extensively in the Russian army.

#### TYPHUS IN MODERN TIMES.

At the present time typhus fever has disappeared from a very considerable part of the earth. For the time being at least it has ceased to be a world menace, and there would seem to be no question that the gradual improvement in sanitary conditions throughout the civilized world has been largely accountable for this fact. It has always been a disease of cold or temperate climates, Great Britain, Ireland and Russia having especially suffered from it, and when it has occurred in Germany and Austria it has invariably been introduced from Russia.

In the United States there have been no outbreaks for over ten years. Sporadic cases have, however, appeared occasionally, and often at great distances from any known focus of the disease. Typhus fever in epidemics is exceedingly contagious, but sporadic cases are apparently not particularly dangerous, a point upon which Murchison lays much emphasis, and to which type of the disease the infection which in New York has been known as Brill's disease apparently belongs. In epidemics, doctors and nurses, on account of their continuous exposure, are always attacked in disproportionately large numbers, and there is probably no disease that has claimed so many victims among the medical profession.

In Great Britain and Ireland typhus fever is always more or less endemic, that is to say, it is at all times more or less prevalent, but the disease is well controlled and apparently there is no especial danger to the community. In certain parts of Europe, particularly in the southeastern, it may be said to smoulder continually, and in certain of the Baltic and Polish provinces and in Hungary and Turkey it is always more or less prevalent. Southern Italy is also a focus of the disease, and it is endemic in Northern Africa. Persia is rarely free from it, but, curiously enough, in India, in spite of its famines, the disease seems to be very rare. In fact, Murchison states that he could not quite determine from the descriptions he had received from India whether or not the disease had ever existed in that country. It occurs with more or less frequency in China.

#### SEX AND AGE.

In widespread epidemics the two sexes are attacked with about equal frequency, but in districts in which the disease exists for some time in a mild epidemic form, the male cases are in the majority. Infants are

apparently only slightly susceptible, but after the age of five years children appear to be almost as liable to the disease as are adults. The number of adults of fifty years and over who are attacked is comparatively large.

#### SOCIAL CONDITIONS.

Social conditions are a most important factor in the causation of typhus fever, and if the body louse plays such an important part in the transmission of this disease as is now very generally believed, we have a ready explanation of the fact, formerly so well known, that persons whose surroundings are insanitary, and especially those living in crowded dwellings, are exceedingly liable to contract it. With overcrowding are apt to be associated the physical conditions induced by improper and scanty food, and in this connection it is stated that, of 18,000 patients admitted to the London fever hospitals during twenty-three years, 95 per cent. had previously been inmates of other hospitals or had been dependent upon the parish for relief. Privation, starvation and want are powerful predisposing influences in the production of typhus fever. Patients convalescent from other diseases are said to be extremely susceptible, obviously on account of their weakened physical condition. Alcoholism is said to be a predisposing cause.

#### TYPHUS FEVER IN NEW YORK CITY.

On the American continent typhus fever has never been very prevalent. Localized epidemics, introduced by immigrants, occurred in Canada during 1847. In New York City there were epidemics in 1867 and 1868, in 1881 and 1882, and in 1892 and in 1893. In Philadelphia an epidemic occurred in 1883. The disease appeared in Mexico and Cuba in 1906, and it is still prevalent in Mexico. In New York City, after the subsidence of the epidemic of 1867-68, occasional cases continued to be reported nearly every year, but no secondary cases developed until 1881, when a serious outbreak took place, and during 1881 and 1882, 810 cases, with 225 deaths, occurred in Manhattan, and 11 cases, with 4 deaths, in Brooklyn. The last epidemic in New York City occurred in 1892. There were 707 cases, with 245 deaths, in Manhattan, but no cases in Brooklyn. The strictly local character of this epidemic was very apparent. With the exception of a very few cases the disease was confined to a small number of lodging and tenement houses, and this restriction obviously speaks in favor of the recent theory of its transmission by means of the body louse.

#### EPIDEMIC OF 1892-93.

The history of this last epidemic in New York City presents some points of interest. Four cases of typhoid fever were reported on Feb. 10, 1892, from one house in East 12th Street. The diagnostician who visited these

cases stated that he had examined 7 persons in one room sick with what he believed to be not typhoid but typhus fever, and a more careful search disclosed the presence of 15 well-developed cases of this disease in the house. The building, a lodging house, was occupied for the most part by immigrants who had arrived in New York on the 30th of January by the steamer "Massilia," from Marseilles, France. They were part of a band of Russian Hebrews who had been driven from Russia by poverty and distress, and who, through the aid of the United Hebrew Charities Association, had on their arrival been segregated in eight lodging houses. The remaining houses were all visited immediately, and before the evening of the 11th of February 67 cases of typhus had been removed to Riverside Hospital on North Brother Island. All the remaining immigrants who had been exposed to the contagion were segregated in two of the houses, under the surveillance of the department. Cases developed almost daily in both these houses, and as later they continued to occur at greater intervals than the period of incubation, it was deemed advisable to vacate the houses and to continue the observation of the suspects on North Brother Island.

#### CONSEQUENCES OF THE NEW YORK EPIDEMIC.

As a result of the New York epidemic isolated cases occurred in other cities. A family of 7 persons who had been exposed had been sent to Oakdale, Mass., and another family of 5 persons to Kinderhook, N. Y. The health officers of these towns were notified, and in both families cases of typhus were found. It was also ascertained on the day of the outbreak that 400 Italians had arrived on the steamer "Massilia" and had gone to various parts of the city or to places outside of New York. They were located by means of the passenger list in possession of the immigration authorities at Ellis Island, and a few cases of typhus were discovered among these Italians in Providence, R. I., and in Newburgh, N. Y. A somewhat peculiar feature of this epidemic was that the death-rate among the passengers of the "Massilia" was comparatively low, while among the residents of New York who contracted the disease from them the death-rate was high, and among health department employees very high. Thus, among the "Massilia" passengers there were 138 cases, with 13 deaths; among residents of New York, 83 cases and 27 deaths, and among the health department employees there were 13 cases, with 4 deaths. These figures apply to the year 1892. In July of this year cases ceased to occur, but the disease recurred in November and continued until July, 1893. During 1893 there were 473 cases, with the exceedingly high mortality of 200 deaths.

## TO WHAT EXTENT DO LOCAL BOARDS OF HEALTH ASSIST PATIENTS RELEASED FROM STATE SANATORIA?

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BY WM. HALL COON, M.D., STATE INSPECTOR OF HEALTH.

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Following is a report on 80 persons discharged from State sanatoria during the period July 19, 1910, to March 14, 1912, to return to one of our larger cities:—

(1) This patient, a man, was discharged from Westfield, "against advice," Aug. 30, 1911, as "improved." On his return home he kept out and about on the street and elsewhere, but grew constantly worse, until one day, about two months after his discharge, he was taken on the street with a hemorrhage and died. This man was said to have been careless in his habits and to have expectorated promiscuously. It was stated that no advice or assistance was given this man by the local board of health.

(2) This patient, a man, was discharged, "against advice," from Westfield, May 22, 1911, as "improved." He returned to his home and went to work in an office as a clerk. While no opportunity was given to make a physical examination, it was stated by members of his family that he was rapidly failing in health. He was found to live in a clean, neat, orderly home, among relatives who realized his condition.

(3) This patient, an old man, was discharged from Westfield, Nov. 26, 1910, as an "arrested" case. His habits were such that he had little regard for the health of others, and expectorated anywhere. Although discharged as an arrested case, he grew constantly worse, and died one year after his discharge from the hospital. The local anti-tuberculosis society attempted to give him advice and assistance, but he refused all help and ignored all advice. It was stated that no advice or assistance was given this man by the local board of health.

(4) This patient, a young man, was discharged from Rutland, Oct. 26, 1911, as an "arrested" case. Soon after returning home he went to work as a carpenter, working indoors in the shop. A physical examination showed an active process in both apices. He had a constant cough and expectorated carelessly. He was found to live under fair sanitary surroundings, but was not carrying out proper treatment for his disease. It was stated that he received no advice or assistance from the local board of health.

(5) This patient, a man, was discharged from Westfield, Feb. 7, 1911, as an "arrested" case. He could not be found at the address given by

the hospital authorities, and no person could be found who had any knowledge of his whereabouts.

(6) This patient, a woman, who was discharged from Westfield, Sept. 4, 1911, as an "improved" case, could not be found at the address given by the hospital authorities, nor could any person be found who had any knowledge of her whereabouts. I was unable to find that the local board of health had any record of her admission to or discharge from the hospital, and it would seem that the only report ever received by the local board of health concerning this case was that of a private physician, who reported the patient previous to her admission to the hospital.

(7) This patient, a young man, was discharged from Rutland, Dec. 1, 1911, as an "arrested" case. A physical examination, however, showed an active process in both lungs, with a cavity in the left apex. Temperature  $99\frac{1}{2}$ . He was found to have a constant cough, with considerable expectoration, to be short of breath and so weak that it was impossible for him to work. He was admittedly a man of bad habits, and took absolutely no care of himself or of his expectoration. The local anti-tuberculosis league had endeavored to influence his habits, but he has not proved amenable to reason.

(8) This patient, a woman, was discharged, "against advice," from Westfield, April 1, 1911, as an "arrested" case. Physical examination showed no active process in either lung. The woman was found not taking proper care of herself, however, and worked indoors all day. I could not find at the office of the local board of health any record of her admission to or discharge from the hospital. The only record of the case seemed to be that of a private physician, who reported the patient previous to her admission to the hospital. It was stated that this woman had received no advice or assistance from the local board of health; furthermore, that no inquiry had been made by the board as to her condition.

(9) This patient, a young woman, was discharged from Rutland, Feb. 5, 1912, as "unimproved." On her discharge from the hospital she returned to her original address, and for the most of the time since has been confined to her bed. She has grown worse and is now in an advanced stage of the disease.

(10) This patient, a young woman, was discharged, "against advice," from Westfield, May 24, 1911, as "improved." For a time after her discharge she felt unable to do any work, but on September 1 of last year she secured employment as a housemaid in a private family, and has since continued that occupation. Physical examination showed an active process, with multiple cavities, in the left lung, and an advanced process in the right apex. She was found to be short of breath, ex-

pectorated promiscuously and took no care of herself, sleeping in a closed room and spending the greater part of her time indoors. It appears that this patient was reported once to the local board of health, a month previous to her admission to the hospital. There could not be found at the office of the board of health any record of her admission to or discharge from the hospital, and it was stated that no advice or assistance had ever been given the patient by the local board of health, or inquiry made as to her condition. It could not be found that assistance or advice had been received or offered from any source.

(11) This patient, a young woman, was discharged from Rutland, April 29, 1911, as "apparently cured." For almost a year after her return from the hospital she did no work, but lived at home, going out and about at her pleasure and taking no special care of herself. She then went to work in a local factory, where she was found to be employed under good sanitary conditions. When seen she was found to be extremely pale and anæmic, and developing exophthalmic goitre. Although she stated that she had no cough and no chills or night sweats, she was found, on examination, to have an active process of tuberculosis in both apices. On inquiry at the office of the local board of health the only information found concerning her case was that concerning her admission to the hospital. The board of health had no knowledge of her discharge from there. Since her arrival home from the hospital, a period of fourteen months, no person or organization has offered her any advice or assistance, or has made inquiry as to her condition.

(12) This patient, a woman, was discharged from Rutland, June 19, 1911, as an "arrested" case. On inquiry at the address given by the hospital authorities it was found that she did not return there, and careful investigation failed to reveal any trace of her whereabouts. It was found that the local board of health had no data relative to this case.

(13) This patient, a woman, was discharged from Rutland, March 9, 1911, as an "arrested" case. On inquiry it was found that during the year subsequent to her discharge from the hospital she had lived in her own home, under sanitary conditions which were very good, and that she had taken excellent care of herself. She was found, however, suffering from dyspnoea, and incapable of any continued exertion. Examination of her lungs showed a markedly active tubercular process in both apices. She stated that since her discharge from the hospital she had received no advice, assistance or inquiry as to her condition from any person or organization. The physician in charge of the patient had not reported the case to the board of health.

(14) This patient, a woman, was discharged from Westfield, April 11, 1911, as an "arrested" case. Although several calls were made at

her residence she could not be found at her home. Her mother stated that the girl was "all right," but it was a fact, nevertheless, that she was constantly under the care of a physician.

(15) This patient, a man, was discharged from Westfield, April 1, 1911, as an "improved" case. No trace of him could be found in the city, and no report of him at the office of the local board of health.

(16) This patient, a man, was discharged from North Reading, May 23, 1911, with no statement as to his condition on discharge. Inquiry at the address given by the hospital authorities brought out the fact that nothing was known of the man at this address, and further inquiry and search failed to give any clue as to his whereabouts. The only knowledge had by the local board of health of this man was the statement of the hospital authorities that he had been discharged from the institution.

(17) This patient, a young man, was discharged from North Reading, Jan. 2, 1911, with no statement as to his condition at the time of discharge. He returned to his original address, a miserable apartment in a three-tenement block, and went out and about in the near neighborhood each day, until fourteen months after his discharge his condition became such that he was again admitted to a State hospital for consumptives. It was stated that during his stay at home, although he was in a feeble condition and expectorated promiscuously, no advice or help was given him by any person or organization, and that the local board of health made no inquiry as to his condition.

(18) This patient, a man, was discharged from Rutland, Dec. 9, 1911, as "apparently cured." Several attempts were made to see him personally, but he evaded an interview. It was stated by his relatives, however, that he was weak, "short of breath" and far from well. At the office of the local board of health it was found that no report had ever been made of this man's disease.

(19) This patient, a man, was discharged, "against advice," from Westfield, April, 1911, as "unimproved." He could not be found at the address given by the hospital authorities, and further search and inquiry failed to give any information as to his whereabouts. At the office of the local board of health the only knowledge of the man was that for a time his maintenance at a State hospital had been paid by a local manufacturing establishment.

(20) This patient, a woman, was discharged from Westfield, Feb. 23, 1911, as an "arrested" case. Upon inquiry at the address given by the hospital authorities it was stated that she had returned to the same institution to work. The only information obtained as to this patient was the notice of her admission to and discharge from the hospital.

(21) This patient, a young woman, was discharged from Westfield,

April 14, 1911, with no comment as to her condition. It was stated by friends that since her discharge from the hospital she had been operated upon for a psoas abscess, and that at the time she was under the care of a local physician. Further information could not be obtained.

(22) This patient, a young woman, was discharged from Rutland Sept. 19, 1911, as "apparently cured." Upon inquiry at the address given by the hospital authorities it was stated that she had returned to the hospital to care for her sister, who was sick there with advanced tuberculosis. The only knowledge of this case on the part of the local board of health was that the girl had been admitted to a State hospital for consumptives. It could not be found that the board had any record of her discharge from the hospital or any knowledge of her subsequent history.

(23) This patient, a man, was discharged from Rutland, May 18, 1911, as "unimproved," and died a month after his return home. On returning home he was given advice and assistance by a private organization and by the local tuberculosis organization.

(24) This patient, a woman, was discharged, "against advice," from Westfield, Oct. 20, 1911, as "improved." When seen she stated that she had no cough but she appeared pale and was very "short of breath." She stated that she had gained in strength, but an examination of her lungs showed an active process of the disease. This patient was not taking proper care of herself and seemed not to realize the importance of proper living. No report of the case could be found at the office of the local board of health.

(25) This patient, a woman, was discharged from Rutland, Dec. 17, 1910, with no comment as to her condition of health at the time of discharge. On inquiry at the address given by the hospital authorities it was found that the patient had returned to this address, but that she had afterwards left for parts unknown. On inquiry at the office of the local board of health no notice of the patient's discharge from the hospital could be found. Moreover, the board had no knowledge of the patient's whereabouts subsequent to her discharge from the hospital.

(26) This patient, a man, was discharged from Rutland, April 24, 1911, as an "arrested" case. He returned to his home, an apartment in an eight-tenement block, and for a short time tried to work, but had to give it up. Since that time he has been miserable. All last summer and winter he was out and about some part of each day, with a constant cough and spitting promiscuously. When seen he was bedridden, and in a terminal stage of tuberculosis. He stated that since his return from the hospital a year ago he received no advice or help from any person or organization. Two of his daughters are now in a State hospital for

consumptives. On inquiry at the office of the board of health no notice of the discharge of this man from the hospital could be found.

(27) This patient, a man, was discharged from Westfield, May 4, 1911, as "apparently cured." He returned to his home and has since been rapidly failing in health. He was coughing badly, expectorating promiscuously and without care, and was in a terminal stage of tuberculosis. It was stated that since his return from the hospital no advice or assistance had been given him by any person or organization, and that no inquiry had been made as to his condition.

(28) This patient, a woman, was discharged, "against advice," from Westfield, April 8, 1911, as "unimproved," and died five months afterward. She received advice and assistance through a local anti-tuberculosis society previous to her death. Her son, a small child, contracted tuberculosis, and at the time of my visit was cared for by the tuberculosis society. This society, however, had made no report of the case to the local board of health.

(29) This patient, a woman, was discharged from North Reading, Aug. 31, 1911, with no comment as to her condition. After her return home she went out and about each day for a month, coughing and taking no care of the sputum. She soon took to her bed, and died four months after her return home. This woman was assisted and advised by a local tuberculosis society.

(30) This patient, a man, was discharged "against advice," from Westfield, April 17, 1911, as "unimproved." He could not be found at the address given by the hospital authorities, and further search and inquiry failed to give any information as to his whereabouts. At the office of the local board of health it was found that the only knowledge the board had of the case was a statement of his discharge from the hospital.

(31) This patient, a woman, was discharged from Westfield, Jan. 14, 1911, as "unimproved." On inquiry at the address given by the hospital authorities it was found that no such person had lived there for the past two years, and further search and inquiry failed to give any information as to her whereabouts. At the office of the local board of health there could be found no report of the patient from any source.

(32) This patient, a man, was discharged from Westfield, April 29, 1911, as "improved." He did not return to his original address but went elsewhere, and shortly afterward left with his family for the west. He lived in a western State for a short time, and then returned to Massachusetts, again entering the sanatorium five months after his discharge. It was found that at times he was aided and assisted by the anti-tuberculosis society.

(33) This patient, a woman, was discharged from Westfield, May 27, 1911, as an "arrested" case. She did not return to the address given by the hospital authorities, but subsequently lived at several addresses. This girl died eleven months after her return from the hospital. She was said to have been a girl of uncertain habits, out and about everywhere, at moving-picture places and other resorts. It was also stated that, previous to her death, while yet able to be out and about, she was very careless as to the disposal of her sputum. A local anti-tuberculosis society attempted to give her aid and advice, but while aid was accepted, advice was not heeded. The aid extended by the tuberculosis society was given for the local board of health.

(34) This patient, a man, was discharged from Westfield, Dec. 27, 1910, as "unimproved." It was stated that he subsequently returned to the hospital, and developing a surgical affliction came home for an operation and died. This man was aided by the local board of health through the anti-tuberculosis society.

(35) This patient, a man, was discharged from Rutland, Feb. 15, 1912, as "apparently cured." He returned home amidst unfavorable surroundings, and after a short time went to work for a local ice company. While he could not be located for a physical examination, his wife stated that he still had considerable cough and expectoration. He was not following the treatment commenced at the hospital and took but little care of himself. His sanitary surroundings were unfavorable. Since his return from the hospital no inquiry as to his condition had been made by any person or organization.

(36) This patient, a girl, was discharged from Rutland, March 9, 1911, as an "arrested" case. She stated that she had never had any cough or expectoration, and a careful physical examination failed to show any evidence of tuberculosis. At the office of the local board of health no notice of the girl's discharge from the sanatorium could be found.

(37) This patient, a woman, was discharged from Rutland, March 9, 1911, as an "arrested" case. While she could not be located for physical examination, a statement was made by a member of her family that she still had considerable cough and expectoration, and that she appeared not to be getting any better. At the office of the local board of health no report of her case from any source could be found.

(38) This patient, a man, was discharged from Rutland, Nov. 15, 1910, with no comment as to his condition on discharge. He returned to his residence of original address, but soon after left for parts unknown. On inquiry at the office of the local board of health there could be found no data relative to the case.

(39) This patient, a man, was discharged for "infraction of rules," from Westfield, Feb. 23, 1911, as "unimproved." He returned to his home of original address, stayed there for two months, and then went to Italy, where he was said to have died. On inquiry at the office of the local board of health there could be found no data of any kind relative to the case.

(40) This patient, a man, was discharged from Lakeville, May 3, 1911, at his "own request," "against advice." No comment was made as to his physical condition at the time of discharge. On inquiry at the address given by the hospital authorities no information could be obtained relative to the person, and subsequent search failed to give any information as to his whereabouts.

(41) This patient, a man, was discharged from Rutland, May 23, 1911, as "improved." He returned to his original address and continued out and about for six months, during which time he was coughing and expectorating. His was a laryngeal case, and he was said to have been very careless as to his habits. He died nine months after his return from the hospital. Assistance was given him by the local board of health acting through the local tuberculosis society.

(42) This patient, a young woman, was discharged from Rutland, Nov. 24, 1911, as an "arrested case." Five months after her return home she went to work in a local manufacturing establishment, where she was found to be employed under excellent sanitary conditions. She still coughed considerably, and, while expectorating, seemed to take no special care of her sputum. Physical examination of her chest disclosed a moderately advanced tubercular process in her right apex. She stated that she slept in a room with the windows open, and that she took fairly good care of herself. On inquiry at the office of the local board of health it could not be found that this case had ever been reported from any source.

(43) This patient, a young woman, was discharged from Westfield, May 25, 1911, as "unimproved." She was stated to have returned to her original address, to have stayed there but a short time and then to have left for residence in the country. She was subsequently married. Investigation disclosed the fact that she later developed a late stage of tuberculosis. On inquiry at the office of the local board of health it could not be found that this board had ever received any report of the case from any source.

(44) This patient, a woman, was discharged from Rutland, Feb. 20, 1911, as an "arrested" case. Since her return she removed to another address, where she was found living in a fairly good tenement. A baby had been born to her since her return, and the care of this and two other

children kept her constantly indoors. She had a constant cough, considerable expectoration, of which she took but little care, and was suffering from dyspnoea. She stated that she was under the care of a private physician, who had told her that she did not have consumption. Physical examination of her chest, however, showed a well-advanced process in both lungs. She was in a well-advanced stage of tuberculosis, was taking no care of herself and was constantly exposing to infection the five other members of her household. She had received some assistance and advice from the anti-tuberculosis society.

(45) This patient, a woman, was discharged from Rutland, May 7, 1911, with the comment on discharge that her case was "not considered because of her short stay." Since her return from the hospital she has lived at three residences. She was found bedridden and in the terminal stage of tuberculosis. The board of health, through the local anti-tuberculosis society, has tried to interest itself in her case, but without response from the patient or members of her family.

(46) This patient, a woman, was discharged from Rutland, May 26, 1911, as an "arrested" case. She returned to her original address, but soon took up another residence in the city. She was found to be employed in domestic service in a private family. She stated that her health had been failing rapidly ever since she returned from the hospital, that she had no appetite and that she was losing weight. She weighed but 90 pounds. She had laryngeal symptoms, with a strangling cough and constant expectoration, of which she took no care. She had physical evidences of well-marked tubercular processes over the greater part of each lung, and, although in a well-advanced stage of the disease, continued in domestic service. On inquiry at the office of the local board of health it could not be found that her case had ever been reported.

(47) This patient, a woman, was discharged from Rutland, May 8, 1911, as "unimproved." She died a few weeks after her return from the hospital.

(48) This patient, a woman, was discharged from Rutland, Sept. 10, 1911, as "unimproved." She did not return to her original address, but went to another town. She was said to be in the terminal stage of tuberculosis.

(49) This patient, a young woman, was discharged "for infraction of rules," from Westfield, Sept. 28, 1911, as "improved." She married a short time after her return, and is now said to be dying from tuberculosis, complicated by osteo-sarcoma of the hip. She is under the care of a private physician, but no inquiry as to her condition had ever been made by the local board of health.

(50) This patient, a man, was discharged "against advice of hospital

authorities," from Westfield, March 14, 1911, as an "improved" case. He returned to his original address and subsequently removed to another residence, and went to work on a delivery team. On inquiry at his residence it was found that he was at the time in a local hospital suffering from "pneumonia," although it was stated by members of his family that for the last few months he had been rapidly failing in health. He had considerable cough and expectoration.

(51) This patient, a young woman, was discharged as an "arrested" case, at her "own request," "against advice," from Lakeville, June 13, 1911. She returned to her home and took up work in a local manufacturing establishment, where she was employed under good sanitary conditions. She stated that she still had some cough. A physical examination disclosed an active process in the right apex. She said that since her return from the hospital she had received no advice, assistance or inquiry as to her condition from any person or organization.

(52) This patient, a man, was discharged "for infraction of rules," from Westfield, Feb. 22, 1911, as an "improved" case. On inquiry at the address given by the hospital authorities it was found that his immediate family had no knowledge as to his whereabouts, although it was supposed that he had subsequently entered another State hospital. On inquiry at the office of the local board of health it could not be found that this case had ever been reported to that board.

(53) This patient, a man, was discharged from Rutland, Dec. 5, 1910, with no comment as to his condition at the time of discharge. He returned home and went to work in a local manufacturing establishment, where he was employed under fair sanitary conditions. While in appearance he was pale and underweight, he stated that he was well. No opportunity was given for a physical examination.

(54) This patient, a woman, was discharged from Rutland, Aug. 24, 1911, with the statement that her condition was not "improved." She returned to her home, where she was taking good care of herself, and she stated that she was gaining in weight. A physical examination, however, disclosed a well-advanced tubercular process in the right lung. The patient was found to be under a physician's care. She had received no advice or assistance from the local board of health since her return home, and the board had made no inquiry as to her condition.

(55) This patient, a man, was discharged from Rutland, Nov. 22, 1911, as an "arrested" case. He lived under good sanitary conditions, but was employed as a compositor in the office of a local newspaper. He stated that he was taking good care of himself, that he felt well and that he had no cough. He appeared to be in fairly good health. No opportunity was given for a physical examination.

(56) This patient, a man, was discharged from Rutland, Nov. 19, 1910, with no statement as to his condition at the time of discharge. Neither this man nor his family could be located for inquiry, but it was found that the local board of health had no record of his admission to or discharge from the hospital, or, in fact, any knowledge of the case whatever.

(57) This patient, a woman, was discharged from Rutland, Feb. 2, 1911, as an "arrested" case. She was not investigated, but at the office of the local board of health no record could be found of her entrance to or discharge from the hospital.

(58) This patient, a man, was discharged from Westfield, Sept. 26, 1911, as "improved." He was not investigated, but at the office of the local board of health no record could be found of his entrance to or discharge from the hospital.

(59) This patient, a man, was discharged from Rutland, April 11, 1911, as an "arrested" case. He returned home to his original address and shortly afterward moved to another residence. While he could not be located for examination, it was stated by members of his immediate family that he was in poor physical condition, and that he had constant cough and expectoration. After his return from the hospital no inquiry as to his condition was made by any person or organization.

(60) This patient, a young woman, was discharged from Westfield, Nov. 25, 1911, as an "arrested" case. At the time of her discharge no address was given by the hospital authorities and no knowledge of her whereabouts could be obtained. No report of this case could be found at the office of the local board of health.

(61) This patient, a woman, was discharged from Westfield, April 14, 1911, as an "improved" case. Careful inquiry failed to reveal any information as to her whereabouts.

(62) This patient, a man, was discharged from Westfield, July 7, 1910, as an "arrested" case. Immediately after his return he took up work in a local machine shop and has since been employed each day. He was stated to be well and in excellent physical condition.

(63) This patient, a woman, was discharged from Westfield, Sept. 15, 1911, as an "arrested" case. She subsequently removed to another town, where she was found to be employed in a woolen mill. Members of her immediate family stated that she had not been well for some time, and that in the last few months she had developed considerable cough, with some expectoration.

(64) This patient, a woman, was discharged as "improved," "against advice," from Westfield, Aug. 26, 1911. She took her bed, however, on the day of her return home, and subsequently removed to another address, and died some months after her return from the hospital.

(65) This patient, a woman, was discharged from Rutland, Dec. 1, 1911, as an "arrested" case. On inquiry at the address given by the hospital authorities no knowledge of her could be obtained, and the only information found at the office of the local board of health was that the board had received notice of her discharge from the hospital.

(66) This patient, a woman, was discharged from Westfield, June 21, 1911, with no statement as to her condition on discharge. She could not be located for inquiry or examination.

(67) This patient, a woman, was discharged from Westfield, March 14, 1912, as an "advanced" case. She returned to her home, and subsequently went to another residence to keep house for her two brothers. She was in a far-advanced stage of tuberculosis, but was out and about each day, and was stated to take no care of her expectoration. She stated that no advice or assistance had been offered her from any source whatever.

(68) This patient, a woman, was discharged from Westfield, Dec. 1, 1911, as an "arrested" case. The only information that could be obtained concerning her at the office of the local board of health was notice of her discharge from the hospital. No such residence could be found as that given by the hospital authorities.

(69) This patient, a woman, was discharged from Westfield, July 19, 1910, with no statement as to her condition. She returned home, married and subsequently removed to another town. It was stated by relatives that she was in a poor physical condition, with constant cough and expectoration, and it was also stated that no inquiry at the residence of the patient had been made by local health authorities.

(70) This patient, a woman, was discharged from Westfield, Jan. 9, 1911, as "unimproved." She could not be found at the address given nor could any information be obtained as to her whereabouts.

(71) This patient, a woman, was discharged from Westfield, July 24, 1910, with no statement as to her condition at the time of discharge. She was said to have died shortly after her return home, although no definite information could be had concerning her.

(72) This patient, a man, was discharged from Westfield, Jan. 12, 1911, as "unimproved." He was said to have died two days after his return home.

(73) This patient, a man, was discharged from Westfield, Oct. 3, 1910, with no statement as to his condition at the time of discharge. On inquiry at the residence given it was stated that he had left this country to return to Armenia, and had died there.

(74) This patient, a man, was discharged from Rutland, July 13, 1911, with a statement that his condition was "improved." He was said to have remained at work in the hospital.

(75) This patient, a woman, was discharged from Rutland, Nov. 1, 1911, as "improved." This case was not investigated.

(76) This patient, a woman, was discharged from Rutland, Jan. 11, 1912, as an "arrested" case, and was said to have remained at work in the hospital.

(77) This patient, a man, was discharged from Westfield, Aug. 21, 1911, with no statement as to his condition at the time of discharge. On inquiry at the address given by the hospital authorities nothing could be learned as to his whereabouts. The local board of health had no knowledge concerning him.

(78) This patient, a man, was discharged from Rutland, March 6, 1911, as "unimproved." On inquiry at the address given it was stated that he had removed to another State.

(79) This patient, a young woman, was discharged from Rutland, Dec. 1, 1911, as an "arrested" case. She returned to her home, where she was supposed to be taking reasonably good care of herself. She stated that she was well. No opportunity was given for a physical examination. She said that since her return from the hospital no inquiry as to her condition had been made by any organization or by the local board of health.

(80) This patient, a man, was discharged from Westfield, March 23, 1911, as an "arrested" case. He was said to have remained at work in the hospital.

## SUMMARY.

There were thus reported to the board of health of one of our larger cities or to the State Inspector of Health of the district, or to both, as discharged from a State hospital to return to said city, for the period July 19, 1910, to March 14, 1912, 80 persons. Of the 80 persons thus reported there were said to have been "apparently cured," 5; "arrested," 28; and "improved," 16.

Forty-nine cases, therefore, or 61 per cent. of the total, were discharged as either "apparently cured," "arrested" or "improved."

A brief statement concerning these 49 cases is as follows:-

Dead, . . . . .	5
Disappeared, . . . . .	9
Active tubercular process, . . . . .	19
No history, . . . . .	3
In apparent good health, . . . . .	5
Not investigated, . . . . .	3
Stayed at hospital to work, . . . . .	5

Of the 80 cases, it was found, on inquiry at the office of the local board of health, that 16 had apparently never been reported.

No knowledge whatever could be obtained as to the whereabouts of 20 of the 80 persons supposed to have returned to the city under consideration (25 per cent. of all cases). Of these 20 persons, 9 had been discharged from State sanatoria as "apparently cured," "arrested" or "improved," 4 had been discharged as "unimproved," and 7 with no comment as to health.

In the greater number of cases investigated it was found that no aid or assistance had been given by the local board of health, and that no inquiry relative to the home conditions surrounding any patient had been made by said board. It appeared to be the custom of the local board of health not to offer aid or assistance to any patient, or to advise or to make inquiry concerning any patient except on request. In any event, no patient was aided by the local board of health unless it was first proved that tubercle bacilli could be found in the sputum.

*Note.* — The above report made by the State Inspector of Health should be accepted as a statement of facts dispassionately collected. The patients were not selected. The simple and sole reason for publishing the facts is that the public may know the existing custom of health officials and others in dealing with the problem of preventing the spread of tuberculosis. Criticism is not aimed specifically at any one board's or official's work. Similar investigations in other sections of the Commonwealth have shown like results. Such investigations obviously deserve the attention of the public, and demand renewed efforts of co-operation on the part of public health officials and private tuberculosis organizations. To the credit of a few local boards of health, which have been effectively supported by the local communities, it must be said that patients ill with tuberculosis are promptly investigated and assisted, financially and otherwise, with the view of preventing the spread of the disease.

#### **CORRECTION IN RELATION TO THE F. H. DICKINSON COMPANY.**

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In the May (1912) issue of the Monthly Bulletin it was stated that the F. H. Dickinson Company of Boston had been convicted for the sale of decomposed catsup.

This statement was incorrect, no action in court having been brought by the State Board of Health against the above-mentioned company.

New Series.

JULY, 1912.

Vol. 7. No. 7.

# MONTHLY BULLETIN



OF THE

## STATE BOARD OF HEALTH

OF

## MASSACHUSETTS.

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An official publication of the State Board of Health of Massachusetts, issued monthly from the office of the Board, 145 State House, Boston, Mass.

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1912.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING JULY 6, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal In- fectious Dis- eases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria,	Typhoid Fever.	Scarlet Fever.	Menses.	Whooping Cough.
Boston, .	686,092	196	63	66	12	25	—	—	1	—	—	—
Worcester, .	145,986	51	22	8	3	1	—	—	—	—	—	—
Fall River, .	119,295	29	17	17	3	4	2	—	—	—	—	—
Lowell, .	106,294	34	13	14	3	4	2	—	—	—	—	—
Cambridge, .	104,839	23	7	2	—	—	—	—	—	—	—	—
New Bedford, .	96,652	39	16	11	1	1	—	—	—	—	—	—
Lynn, .	89,336	24	4	3	1	1	1	—	—	—	—	—
Springfield, .	88,926	19	7	9	3	1	1	—	—	—	—	—
Lawrence, .	85,892	24	13	8	2	1	1	—	—	—	—	—
Somerville, .	77,236	16	2	3	3	3	—	—	—	—	—	—
Holyoke, .	57,730	24	11	10	1	1	3	—	—	—	—	—
Brockton, .	56,878	9	2	2	1	1	1	—	—	—	—	—
Malden, .	44,404	8	2	2	—	—	—	—	—	—	—	—
Haverhill, .	44,115	12	—	5	1	1	2	—	—	—	—	—
Salem, .	43,697	9	2	1	—	—	1	—	—	—	—	—
Newton, .	39,806	8	4	2	1	—	—	—	—	—	—	—
Fitchburg, .	37,826	6	2	1	—	—	—	—	—	—	—	—
Taunton, .	34,259	14	3	6	4	1	—	—	—	—	—	—
Everett, .	33,484	5	1	1	—	—	—	—	—	—	—	—
Quincy, .	32,642	7	1	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	6	4	2	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	8	2	2	1	—	—	—	—	—	—	—
Waltham, .	27,834	4	0	1	—	—	—	—	—	—	—	—
Brookline, .	27,792	10	1	1	1	1	—	—	—	—	—	—
Chicopee, .	25,401	8	6	4	—	—	1	—	—	—	—	—
Gloucester, .	24,398	7	2	—	—	—	—	—	—	—	—	—
Medford, .	23,150	4	1	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	6	1	1	—	—	—	—	—	—	—	—
Northampton, .	19,431	8	0	2	—	—	1	—	—	—	—	—
Beverly, .	18,650	6	1	1	—	—	—	—	—	—	—	—
Revere, .	18,219	6	—	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	2	—	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	4	1	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	5	1	3	—	—	3	—	—	—	—	—
Peabody, .	15,721	3	0	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	4	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	4	0	1	1	—	—	—	—	—	—	—
Newburyport, .	14,949	5	—	2	1	—	—	—	—	—	—	—
Gardner, .	14,699	5	1	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	3	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	2	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	4	1	1	—	—	1	—	—	—	—	—
Adams, .	13,026	2	0	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	—	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	0	—	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	1	—	1	—	—	—	—	—	—	—	—
Plymouth, .	12,141	3	—	1	1	—	—	—	—	—	—	—
Webster, .	11,509	3	2	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	2	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	—	3	1	—	—	—	—	—	—	—
Arlington, .	11,187	5	3	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	1	—	1	—	—	—	—	—	—	—	—
Winthrop, .	10,132	4	—	1	1	—	—	—	—	—	—	—

*Recapitulation.*

Total of report- ing towns, .	2,580,537	695	220	199	49	57	9	4	4	2	2	2
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WEEK ENDING JULY 13, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	248	71	69	13	22	-	1	1	-	3
Worcester, .	145,986	62	26	22	7	2	1	1	1	-	1
Fall River, .	119,295	49	26	10	1	1	1	1	1	-	1
Lowell, .	106,294	49	24	13	1	6	1	1	1	-	1
Cambridge, .	104,839	23	6	12	2	1	1	1	1	-	1
New Bedford, .	96,652	26	16	12	-	1	1	1	1	-	1
Lynn, .	89,336	16	2	5	1	2	1	1	1	-	1
Springfield, .	88,926	33	11	11	1	1	1	1	1	-	1
Lawrence, .	85,892	32	20	17	1	2	1	1	1	-	1
Somerville, .	77,236	22	4	4	2	1	1	1	1	-	1
Holyoke, .	57,730	21	9	11	-	1	1	1	1	-	1
Brockton, .	56,878	11	4	4	1	1	1	1	1	-	1
Malden, .	44,404	9	3	-	-	1	1	1	1	-	1
Haverhill, .	44,115	13	2	4	1	1	1	1	1	-	1
Salem, .	43,697	15	6	-	-	1	1	1	1	-	1
Newton, .	39,806	10	4	2	-	1	1	1	1	-	1
Fitchburg, .	37,826	7	4	1	1	1	1	1	1	-	1
Taunton, .	34,259	19	5	4	-	1	1	1	1	-	1
Everett, .	33,484	8	1	-	1	1	1	1	1	-	1
Quincy, .	32,642	8	1	-	-	1	1	1	1	-	1
Chelsea, .	32,452	13	1	5	-	4	1	1	1	-	1
Pittsfield, .	32,121	12	3	4	-	1	1	1	1	-	1
Waltham, .	27,834	9	2	1	-	1	1	1	1	-	1
Brookline, .	27,792	2	-	1	-	1	1	1	1	-	1
Chicopee, .	25,401	12	10	9	1	1	1	1	1	-	3
Gloucester, .	24,398	2	-	-	-	1	1	1	1	-	1
Medford, .	23,150	7	-	-	-	1	1	1	1	-	1
North Adams, .	22,019	4	1	-	-	1	1	1	1	-	1
Northampton, .	19,431	8	1	3	-	1	1	1	1	-	1
Beverly, .	18,650	4	1	-	-	1	1	1	1	-	1
Revere, .	18,219	1	-	1	-	1	1	1	1	-	1
Leominster, .	17,580	8	2	1	1	1	1	1	1	-	1
Attleborough, .	16,215	1	0	-	-	1	1	1	1	-	1
Westfield, .	16,044	4	2	1	-	1	1	1	1	-	1
Peabody, .	15,721	3	0	-	-	1	1	1	1	-	1
Melrose, .	15,715	2	-	1	-	1	1	1	1	-	1
Woburn, .	15,308	2	1	2	-	1	1	1	1	-	1
Newburyport, .	14,949	7	1	-	-	1	1	1	1	-	1
Gardner, .	14,699	2	1	1	-	1	1	1	1	-	1
Marlborough, .	14,579	5	1	2	-	1	1	1	1	-	1
Clinton, .	13,075	4	1	-	-	1	1	1	1	-	1
Milford, .	13,055	5	1	1	-	1	1	1	1	-	1
Adams, .	13,026	2	1	1	-	1	1	1	1	-	1
Framingham, .	12,948	6	-	-	-	1	1	1	1	-	1
Weymouth, .	12,895	-	-	-	-	1	1	1	1	-	1
Watertown, .	12,875	4	2	1	1	1	1	1	1	-	1
Southbridge, .	12,592	1	-	-	-	1	1	1	1	-	1
Plymouth, .	12,141	1	-	-	-	1	1	1	1	-	1
Webster, .	11,509	4	1	1	-	1	1	1	1	-	1
Methuen, .	11,448	0	-	-	-	1	1	1	1	-	1
Wakefield, .	11,404	1	-	-	-	1	1	1	1	-	1
Arlington, .	11,187	1	1	-	-	1	1	1	1	-	1
Greenfield, .	10,427	2	-	-	-	1	1	1	1	-	1
Winthrop, .	10,132	2	-	-	-	1	1	1	1	-	1

## Recapitulation.

Total of reporting towns, .	2,593,485	822	279	238	35	58	9	5	3	-	12	4
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WEEK ENDING JULY 20, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	204	64	74	14	25	5	-	1	-	1	1
Worcester, .	145,986	50	23	18	5	4	-	-	1	-	-	-
Fall River, .	119,295	38	26	13	1	-	-	-	-	-	-	-
Lowell, .	106,294	31	14	6	3	2	2	4	1	-	-	-
Cambridge, .	104,839	22	6	8	2	1	1	1	1	-	-	-
New Bedford, .	96,652	52	34	34	1	1	1	1	1	-	-	-
Lynn, .	89,336	21	3	8	1	1	1	1	1	-	-	-
Springfield, .	88,926	32	12	14	1	1	1	1	1	-	-	-
Lawrence, .	85,892	24	12	2	1	1	1	1	1	-	-	-
Somerville, .	77,236	12	4	12	1	1	2	1	1	-	-	-
Holyoke, .	57,730	19	10	3	1	1	1	1	1	-	-	-
Brockton, .	56,878	11	8	3	1	1	1	1	1	-	-	-
Malden, .	44,404	9	2	2	-	-	-	1	1	-	-	-
Haverhill, .	44,115	7	2	3	2	-	-	-	-	-	-	-
Salem, .	43,697	8	3	2	-	-	-	-	-	-	-	-
Newton, .	39,806	3	2	1	-	-	-	-	-	-	-	-
Fitchburg, .	37,826	4	2	1	-	-	-	-	-	-	-	-
Taunton, .	34,259	13	5	5	4	2	1	1	1	-	-	-
Everett, .	33,484	5	4	1	1	1	1	1	1	-	-	-
Quincy, .	32,642	6	0	1	1	1	1	1	1	-	-	-
Chelsea, .	32,452	9	2	1	1	1	1	1	1	-	-	-
Pittsfield, .	32,121	6	-	1	1	1	1	1	1	-	-	-
Waltham, .	27,834	1	0	1	1	1	1	1	1	-	-	-
Brookline, .	27,792	3	-	1	1	1	1	1	1	-	-	-
Chicopee, .	25,401	11	8	7	1	1	1	1	1	-	-	-
Gloucester, .	24,398	5	-	1	1	1	1	1	1	-	-	-
Medford, .	23,150	4	-	1	1	1	1	1	1	-	-	-
North Adams, .	22,019	3	1	1	1	1	1	1	1	-	-	-
Northampton, .	19,431	8	1	1	1	1	1	1	1	-	-	-
Beverly, .	18,650	5	1	1	1	1	1	1	1	-	-	-
Revere, .	18,219	3	-	1	1	1	1	1	1	-	-	-
Leominster, .	17,580	2	-	1	1	1	1	1	1	-	-	-
Attleborough, .	16,215	-	0	1	1	1	1	1	1	-	-	-
Westfield, .	16,044	5	2	1	1	1	1	1	1	-	-	-
Peabody, .	15,721	4	-	1	1	1	1	1	1	-	-	-
Melrose, .	15,715	3	-	1	1	1	1	1	1	-	-	-
Woburn, .	15,308	2	-	1	1	1	1	1	1	-	-	-
Newburyport, .	14,949	12	1	1	1	1	1	1	1	-	-	-
Gardner, .	14,699	2	-	1	1	1	1	1	1	-	-	-
Marlborough, .	14,579	3	0	1	1	1	1	1	1	-	-	-
Clinton, .	13,075	4	-	1	1	1	1	1	1	-	-	-
Milford, .	13,055	3	2	1	1	1	1	1	1	-	-	-
Adams, .	13,026	1	-	1	1	1	1	1	1	-	-	-
Framingham, .	12,948	-	-	1	1	1	1	1	1	-	-	-
Weymouth, .	12,895	-	-	1	1	1	1	1	1	-	-	-
Watertown, .	12,875	0	-	1	1	1	1	1	1	-	-	-
Southbridge, .	12,592	2	1	1	1	1	1	1	1	-	-	-
Plymouth, .	12,141	4	2	1	1	1	1	1	1	-	-	-
Webster, .	11,509	2	2	1	1	1	1	1	1	-	-	-
Methuen, .	11,448	1	-	1	1	1	1	1	1	-	-	-
Wakefield, .	11,404	2	1	1	1	1	1	1	1	-	-	-
Arlington, .	11,187	3	-	1	1	1	1	1	1	-	-	-
Greenfield, .	10,427	4	1	1	1	1	1	1	1	-	-	-
Winthrop, .	10,132	3	-	1	1	1	1	1	1	-	-	-

## Recapitulation.

Total of reporting towns, .	2,580,537	684	263	241	42	55	10	2	2	1	13	2
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WEEK ENDING JULY 27, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	DEATHS FROM —												
		Reported Deaths in Each.	Deaths under Five Years.											
			Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.			
Boston, .	636,092	171	57	58	14	18	—	—	—	—	—	—	—	2
Worcester, .	145,986	41	18	11	5	33	—	—	—	—	—	—	—	—
Fall River, .	119,295	47	27	33	1	9	3	3	3	3	3	—	—	—
Lowell, .	106,294	38	13	9	3	—	—	—	—	—	—	—	—	—
Cambridge, .	104,839	21	6	9	1	3	—	—	—	—	—	—	—	—
New Bedford, .	96,652	39	24	21	3	—	—	—	—	—	—	—	—	—
Lynn, .	89,336	19	6	3	1	—	—	—	—	—	—	—	—	—
Springfield, .	88,926	26	9	11	—	—	—	—	—	—	—	—	—	—
Lawrence, .	85,892	26	10	10	—	—	—	—	—	—	—	—	—	—
Somerville, .	77,236	14	4	4	3	—	—	—	—	—	—	—	—	—
Holyoke, .	57,730	33	21	15	1	—	—	—	—	—	—	—	—	—
Brockton, .	56,878	10	2	—	—	—	—	—	—	—	—	—	—	—
Malden, .	44,404	7	1	1	—	—	—	—	—	—	—	—	—	—
Haverhill, .	44,115	10	2	3	—	—	—	—	—	—	—	—	—	—
Salem, .	43,697	15	4	4	—	—	—	—	—	—	—	—	—	—
Newton, .	39,806	6	1	1	1	1	1	—	—	—	—	—	—	—
Fitchburg, .	37,826	6	0	—	—	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	14	5	5	—	—	—	—	—	—	—	—	—	—
Everett, .	33,484	1	—	—	—	—	—	—	—	—	—	—	—	—
Quincy, .	32,642	—	—	—	—	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	6	—	2	—	—	—	—	—	—	—	—	—	—
Pittsfield, .	32,121	14	4	5	—	—	—	—	—	—	—	—	—	1
Waltham, .	27,834	6	1	1	—	—	—	—	—	—	—	—	—	—
Brookline, .	27,792	7	1	2	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	14	10	9	—	—	—	—	—	—	—	—	—	—
Gloucester, .	24,398	9	5	3	—	—	—	—	—	—	—	—	—	—
Medford, .	23,150	4	1	1	—	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	9	6	1	—	—	—	—	—	—	—	—	—	—
Northampton, .	19,431	5	1	2	—	—	—	—	—	—	—	—	—	—
Beverly, .	18,650	4	1	—	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	2	—	1	—	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	2	1	2	—	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	2	0	—	—	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	10	6	4	—	—	—	—	—	—	—	—	—	—
Peabody, .	15,721	—	—	—	—	—	—	—	—	—	—	—	—	1
Melrose, .	15,715	4	1	—	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	2	1	2	—	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	5	1	2	—	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	4	1	1	—	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	1	0	—	—	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	2	—	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	4	3	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	—	—	—	—	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	—	—	—	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	0	—	—	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	2	1	2	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	1	1	—	—	—	—	—	—	—	—	—	—	—
Webster, .	11,509	4	2	2	—	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	5	1	—	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	2	—	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	3	—	—	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	2	—	—	—	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	3	—	—	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,519,148	685	263	240	41	52	10	4	5	-	1	4
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JULY 6, 13, 20 AND 27, 1912.**

DISEASE.	Place.	WEEK ENDING —			
		July 6.	July 13.	July 20.	July 27.
Cerebro-spinal meningitis,	Boston, . . . .	—	4	1	1
	Lowell, . . . .	—	—	—	1
	Lynn, . . . .	—	—	—	1
	Springfield, . . . .	1	—	—	—
	Lawrence, . . . .	—	1	—	—
	Somerville, . . . .	—	1	—	—
	Haverhill, . . . .	—	—	1	—
	Pittsfield, . . . .	—	—	—	1
	Gardner, . . . .	1	—	—	—
	Southbridge, . . . .	1	—	—	—
	Wakefield, . . . .	1	—	—	—
Erysipelas, . . . .	Boston, . . . .	—	3	—	—
	Worcester, . . . .	—	1	—	—
	New Bedford, . . . .	—	—	—	1
	Lawrence, . . . .	—	1	—	—
Puerperal fever, . . . .	Boston, . . . .	1	2	1	1
	Holyoke, . . . .	—	—	—	1
Anterior poliomyelitis, . .	Boston, . . . .	—	—	1	—
	Lowell, . . . .	1	1	1	—
	Springfield, . . . .	—	1	1	2
	Taunton, . . . .	1	—	—	—
	Westfield, . . . .	—	—	—	1
Diarrhoeal diseases, . .	Boston, . . . .	18	19	23	18
	Worcester, . . . .	4	12	8	3
	Fall River, . . . .	8	6	12	25
	Lowell, . . . .	4	3	1	2
	Cambridge, . . . .	—	3	4	2
	New Bedford, . . . .	7	12	26	14
	Springfield, . . . .	4	6	5	6
	Lawrence, . . . .	4	11	12	10
	Holyoke, . . . .	6	8	8	11
	Brockton, . . . .	1	1	2	—
	Malden, . . . .	—	—	1	—
	Haverhill, . . . .	—	2	—	1
	Salem, . . . .	—	—	—	1
	Fitchburg, . . . .	1	1	—	—
	Taunton, . . . .	1	2	2	4
	Pittsfield, . . . .	—	2	—	—
	Chicopee, . . . .	3	5	3	8
	Gloucester, . . . .	—	—	—	3
	Northampton, . . . .	—	—	—	1
	Woburn, . . . .	—	1	—	1
	Southbridge, . . . .	—	—	1	1
	Webster, . . . .	—	1	—	1
	Wakefield, . . . .	1	—	—	—

DEATHS FROM INFECTIOUS DISEASES, ETC.—*Concluded.*

DISEASE.	Place.	WEEK ENDING—			
		July 6.	July 13.	July 20.	July 27.
Meningitis (other than cerebro-spinal).	Lynn, . . . . Leominster, . . . . Westfield, . . . .	— — —	1 1 —	— — 1	— — —
Tetanus, . . . .	North Adams, . . . . Attleborough, . . . .	1 —	— —	— 1	— —

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
JULY 6, 13, 20 and 27, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —				
	July 6.	July 13.	July 20.	July 27.	Total.
Diphtheria, . . . . .	66	56	82	71	275
Measles, . . . . .	380	305	212	125	1,022
Scarlet fever, . . . . .	43	30	28	45	146
Typhoid fever, . . . . .	37	39	46	40	162
Tuberculosis, pulmonary. (or not classified), . . . . .	133	138	133	119	523
Tuberculosis, other than pulmonary, . . . . .	14	10	11	5	40
Cerebro-spinal meningitis, . . . . .	1	9	3	2	15
Meningitis, other than cerebro-spinal, . . . . .	—	—	—	1	1
Whooping cough, . . . . .	39	34	50	56	179
Varicella, . . . . .	28	21	23	19	91
Ophthalmia neonatorum, . . . . .	26	24	40	22	112
Anterior poliomyelitis, . . . . .	5	7	3	11	26
Mumps, <sup>1</sup> . . . . .	2	2	—	6	10
Smallpox, . . . . .	1	5	1	—	7
Trachoma, . . . . .	—	—	2	—	2
Erysipelas, <sup>1</sup> . . . . .	—	—	—	—	—
Malaria, . . . . .	5	1	1	2	9
Tetanus, . . . . .	—	1	1	—	2

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of July, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	6	1	7	Meat products:—			
Coffee, . . .	2	3	5	Tripe, . . .	1	—	1
Cream, . . .	3	—	3	Milk, . . .	275	195	470
Cream of tartar, .	1	—	1	Non-alcoholic drinks, . . .	6	—	6
Drugs, . . .	96	25	121	Spices, . . .	11	—	11
Eggs, . . .	2	5	7	Table sauces, . . .	—	1	1
Flavoring extracts:—				Vinegar, . . .	5	1	6
Lemon, . . .	3	—	3	Total, . . .	437	240	677
Peppermint, . . .	1	—	1				
Vanilla, . . .	3	—	3				
Fruit juices:—							
Grape, . . .	1	—	1				
Lime, . . .	21	9	30				

The samples of drugs found to be adulterated were spirit of anise, spirit of camphor, sweet spirit of nitre, spirit of peppermint.

The cities and towns in which samples were collected were: Abington, Andover, Bedford, Beverly, Billerica, Boston, Brockton, Carlisle, Chelsea, Concord, Dedham, Everett, Franklin, Gloucester, Holyoke, Ipswich, Lawrence, Lincoln, Lowell, Lynn, Malden, Medford, Middleborough, Natick, Newburyport, Northampton, North Andover, Palmer, Quincy, Revere, Somerville, Springfield, Stoneham, Sudbury, Taunton, Waltham, Ware, Wareham, Watertown, Wayland, West Newbury, Weston, Woburn.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Five convictions were secured during the month of July, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Frank Bodwell, . . .	Ipswich, . . .	Milk (total solids 9.00). <sup>1</sup>
2	Marcus L. Carey, . . .	North Andover,	Milk (total solids 10.30). <sup>1</sup>
3	H. P. Hood & Sons, . . .	Winchester, . . .	Milk (total solids 11.94). <sup>2 3</sup>
4	Marian Zacszewski, . . .	Hadley, . . .	Milk (total solids 10.26). <sup>1 3</sup>
5	Willard E. Greene, . . .	Northampton, . . .	Spirit of peppermint (4 per cent. U. S. P.).

<sup>1</sup> Watered.

<sup>2</sup> Skimmed.

<sup>3</sup>Appealed.

Fines imposed, \$225.

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR JULY, 1912.**

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.	
			1	2
17392 17576	Lime juice, Lime juice,	Good Paeking Company, Lowell, Mass., F. M. Bill Company, Lowell, Mass.,	Contained 50 per cent. added water. Contained 72 per cent. added water; marked 60 per cent.	
2608-O	Golden Tree Lime Juice,	New England Maple Syrup Company, Cambridge, Mass.,	Contained 75 per cent. added water; marked 59.1 per cent.	
2614-O	Trophy Brand Lime Juice.	Delano, Potter & Co., Boston, Mass.,	Contained 62 per cent. added water; marked 49.9 per cent.	
2620-O	Crown West India Lime Juice.	J. P. W. von Laer & Co., Boston, Mass.,	Contained 44 per cent. added water; marked 33 per cent.	
2632-O	"Conqueror," Jamaica Lime Juice.	Eldridge, Baker & Co., Boston and Salem, Mass.,	Contained 49 per cent. added water; marked 40 per cent.	
2634-O	"Banner" Jamaica Lime Juice.	Simpson Spring Company, South Easton, Mass.,	Contained 50 per cent. added water; marked 40 per cent.	
2672-O	Bay State Brand Lime Juice.	Bay State Grocery Company, Boston, Mass.,	Contained 70 per cent. added water; marked 60 per cent.	
q 9263 q 9262 17481 q 9303	Spirit of camphor. Spirit of peppermint, Spirit of peppermint, Tincture of iodine,	Frank F. Ernst, Ph. G., Jamaica Plain, Mass., Ernst, The Druggist, Jamaica Plain, Mass., W. E. Greene, Northampton, Mass., Tessier's Drug Store, Hough's Neck, Mass.,	{ Total solids, 10.40 per cent.; fat, 3.65 per cent.; contained added water. { Total solids, 10.30 per cent.; fat, 3.60 per cent.; contained added water. { Total solids, 11.48 per cent.; fat, 3.60 per cent.; contained added water. { Total solids, 9.32 per cent.; fat, 2.60 per cent.; contained added water.	
2376-O 2378-O	Milk,	Marcus L. Carey, North Andover, Mass.,	Total solids, 8.04 per cent.; fat, 2.30 per cent.; contained added water.	
279 S	Milk,	Robert W. Stowell, Lowell, Mass.,	Total solids, 7.86 per cent.; fat, 2.25 per cent.	
q 9223	Milk,	Thomas E. Spittle, South Essex, Mass.,	Total solids, 7.48 per cent.; fat, 2.20 per cent.; contained added water.	
17457 17458 17459 17460	Milk,	George E. Waldron, W. Gloucester, Mass.,	Total solids, 7.68 per cent.; fat, 2.20 per cent.; contained added water.	

17485 q 9286	Milk, Milk,	Tancrede Collette, Ware, Mass., Kinsman Bros., Middleborough, Mass.,	.	.	.	Total solids, 11.16 per cent.; fat, 3.30 per cent.; contained added water.
355 S 357 S	Milk, Milk,	Frank Bodwell, Ipswich, Mass.,	.	.	.	Total solids, 11.10 per cent.; fat, 3.50 per cent.; contained added water.
529 S	Milk,	Edward Lapham, Jr., Carlisle, Mass.,	.	.	.	Total solids, 8.24 per cent.; fat, 2.40 per cent.; contained added water.
545 S			.	.	.	Total solids, 9.00 per cent.; fat, 2.90 per cent.; contained added water.
553 S			.	.	.	Total solids, 11.12 per cent.; fat, 3.20 per cent.; contained added water.
555 S			.	.	.	Total solids, 11.10 per cent.; fat, 3.55 per cent.; contained added water.
557 S			.	.	.	Total solids, 11.54 per cent.; fat, 3.60 per cent.; contained added water.
559 S	Milk,	Martin L. Kennelly, Billerica, Mass.,	.	.	.	Total solids, 11.12 per cent.; fat, 3.40 per cent.; contained added water.
561 S			.	.	.	Total solids, 11.10 per cent.; fat, 3.20 per cent.; contained added water.
563 S			.	.	.	Total solids, 11.32 per cent.; fat, 3.50 per cent.; contained added water.
565 S			.	.	.	Total solids, 11.32 per cent.; fat, 3.60 per cent.; contained added water.
567 S			.	.	.	Total solids, 11.28 per cent.; fat, 3.80 per cent.; contained added water.

## INSPECTION OF DAIRIES.

During the month of July, 1912, 29 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Nantucket, . . . . .	3	1	33.33	2	66.67
Second inspection, . . . . .	2	2	100.00	-	-
Third inspection, . . . . .	23	16	69.57	7	30.43
Weymouth, . . . . .	1	-	-	1	100.00

Total number of dairies examined, . . . . .	29
Number found to be free from objectionable conditions, . . . . .	19
Number concerning which letters were sent, . . . . .	10
Total number of conditions to which attention was called, . . . . .	32
Percentage of dairies which passed inspection, . . . . .	65.52

Included in the total number of dairies visited were 4 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow:—

## NANTUCKET.

## Class A.

Cabot, W. Channing ‡	Gardner, Wallace ‡	Grouard, J. S., M.D.‡
Crosby, Mary E.‡	Gordon, Harry ‡	

## Class B.

Appleton, William D.‡	Dawson, Walter *	Mowry, E. C.‡
Bartlett, John H.‡	Holm, Frank E.	Roberts, John E., 2d ‡
Chadwick, Albert S.‡	Hussey, Oliver C.‡	Starbuck, Charles F.*
Chadwick, Frank P.‡	Lewis, S. L., Jr.‡	Stevens, William B.‡
Coffin, Albert R.‡	Lowell, Andrew J.‡	

\* Second inspection.

† Third inspection.

|| Reported favorably on all previous inspections.

DISEASE CARRIERS.<sup>1</sup>

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BY PROF. FREDERICK G. NOVY, UNIVERSITY OF MICHIGAN.

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The past two decades have witnessed many notable achievements in medicine, chief among which, as regards the infectious diseases, stand the discovery of the curative sera, and the more recent discovery of specific chemical agents for the treatment and cure of disease. The real, ultimate goal toward which the research work bearing on human and animal infections points is, and must be, the cure of the afflicted. No royal road leads to the desired end, but instead numberless trails must be blazed which too often lead seemingly to nowhere. While the crowning achievement, the direct conquest of disease, is the aim, the investigator from the beginning has endeavored to accomplish essentially the same result by preventive means. The search for the cause of disease, the recognition of the portals of entry and exit, the perfecting of methods of disinfection, and the development of preventive inoculation served to build up a fairly effective basis for prophylaxis. These methods would, indeed, have sufficed had the earlier views regarding the spread of disease been correct. The general knowledge regarding the highly contagious diseases made it seem probable that all infections were spread, more or less directly, from the sick to the healthy, and as a result preventive measures were applied to the patient and to his immediate surroundings. The outcome, however, was not always satisfactory and the reason is not difficult to see. Fully as important as a knowledge of the germ itself is the fundamental fact that disease may be conveyed through the agency of apparently healthy insects, lower animals, and even man himself. It is the recognition of this fact, the existence of *disease carriers*, which has brought about such remarkable results in the fight against malaria, yellow fever, Malta fever and many other diseases. Hence a brief outline of our knowledge of this interesting subject may not be out of place.

It may be well at the outset to state that the term "disease carrier" is applied to animals or persons who, though apparently in perfect health, harbor and eliminate a given disease germ. The fact that the "carrier" is an apparently healthy animal means that the disease may be spread through a wholly unexpected source. The old view of the transmission of disease by contact with the sick remains true, but it is enlarged and supplemented by newer facts. Since more or less direct contact with the apparently healthy carrier, or with the actually sick

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<sup>1</sup> Address of the vice-president and chairman of Section K, American Association for the Advancement of Science, Dec. 29, 1911. Reprinted from *Science*, July 5, 1912.

serves to spread an infection, it is clear that preventive measures must consider the former as well as the latter.

Strange as it may seem, the existence of certain carriers, though not their import, was recognized in the early days of bacteriology. Thus, the presence of the microbe of sputum septicemia in the mouths of healthy persons was noted independently by Sternberg and by Pasteur, in 1880, but it was not until several years later that this organism was shown to be the cause of lobar pneumonia. The frequent persistence of this organism in the sputum after recovery was observed at an early date.

An even more striking example was furnished with the discovery of the diphtheria bacillus in 1883, for Loeffler not only found this organism in the sick, but also in some perfectly healthy children. So contradictory to the accepted order of things was this fact that for several years it prevented the full recognition of this germ as the cause of the disease. The more thoroughly this disease was studied, the more it became evident that recovery did not mean an immediate disappearance of the pathogenic microbe. In other words, clinical recovery did not assure freedom from danger to others. The early recognition of this fact led to the establishment of the bacteriologic control of the recovered patient in the form as it now exists in practice. Two or more consecutive examinations of the throat and nose must yield negative findings before it can be said that the danger of spreading the infection has been overcome.

The presence of the pathogenic agent in the active stage of the disease is a necessary condition; the persistence of such agent during convalescence is more or less to be expected, but the continued existence, at times, of the organism in the individual after complete recovery, and its presence in persons who apparently have never had the disease is somewhat difficult of explanation. The three types thus alluded to are conveniently designated as (1) *convalescent*, (2) *chronic* and (3) *healthy carriers*. The latter in the majority of cases perhaps includes individuals who, at some time, and unknown to them, have had an attack of the disease; they are therefore virtually chronic carriers. Others, though healthy, may be in the incubation stage and hence develop the disease some days later. Lastly, a third group would include strictly healthy carriers, those who have never had the disease and are only remotely liable to it. Obviously, then, it is difficult to distinguish between these several groups of healthy carriers.

#### DIPHTHERIA.

As regards diphtheria, investigations have shown that the healthy carriers are never found in regions free from the disease. They are met with only in places where the disease prevails; the home, hospital, asylum,

school and, naturally, the large city furnish examples, though in extremely variable number. Intimate association with the patient, either before or during sickness, as is likely to occur in the home, yields the largest percentage of such carriers. This is especially true where preventive measures, such as isolation and disinfection, are not enforced at the outset. Under such conditions it has been found that fully one third of the exposed become carriers for a greater or less length of time. Where proper measures are instituted early, the number is necessarily greatly reduced. Systematic examinations made in the large cities have, time and again, demonstrated the presence of healthy carriers in from 2 to 4 per cent. or more of the persons tested.

The persistence of the organism in the healthy carrier is usually, and fortunately, of short duration, though exceptionally it may continue to be present for months. Such carriers are unquestionably a source of danger to others and serve to explain outbreaks of the disease where contact with a sick person is positively excluded. The fact that the blood of a majority of the healthy carriers possesses antitoxic properties indicates clearly that they have passed through a previous, though unrecognized, mild infection, and consequently that they really belong to the type of chronic carriers. A small number of the healthy carriers may eventually themselves develop the disease, while others, for some unknown reason, escape infection.

The convalescent and chronic carriers are properly looked upon as being dangerous to the community. It is a well-recognized fact that the diphtheria bacillus persists in the throat and nose, for a variable period of time, after the disappearance of all clinical symptoms of the disease. It may remain present for a few days, weeks or months. Fortunately, the vast majority rid themselves of the invading organism in a relatively short time, but as long as they harbor the organism they are in a position to infect others. Isolation, under such conditions, is just as necessary as in the acute stage of the infection. The really chronic carrier, the one who harbors the germs for months, if not years, presents the most difficult problem.

#### TYPHOID FEVER.

The studies on typhoid fever during the past few years have been especially fruitful in enlarging our knowledge of human carriers, and have served to concentrate attention to the important part played by these in the propagation of the disease. The accepted cause, the typhoid bacillus, is known to be present not only in the intestines, but also in the internal organs and in the blood. Because of the latter occurrence the majority of typhoid patients, after about the twelfth day of the disease, eliminate the typhoid bacillus in the urine, at times in enormous numbers, and such elimination may continue for weeks after complete recov-

ery has taken place. Exceptionally, the typhoid bacillus may persist in the urine or discharges for months, and years, if not through the remainder of life.

The problem of the healthy carrier is one of special import. Here, as before, we have those who have undoubtedly passed through a previous mild and unrecognized attack of the disease and hence are of the type of true chronic carriers; as such, they are to be looked upon as particularly dangerous. Others there are who but temporarily carry the organism, which soon disappears from the intestine if the source of supply, such as contaminated milk or water, is withdrawn. In these the natural resistance, whatever that may be, is such as to prevent the organism from gaining a foothold, and consequently it is soon got rid of. The individual is and remains healthy, and, because of the temporary presence of the organism, is of relatively little danger to others. On the other hand, the healthy carrier may turn out to be in the incubational stage of the disease, the first symptom of which may appear in several days, or two or three weeks after the detection of the bacillus.

During convalescence from typhoid fever, presumably because of persisting lesions, the specific organism continues to be eliminated for some time. In general, however, after the tenth day following the disappearance of the fever, the typhoid bacillus disappears from the excretions of the convalescents, except from about 10 per cent. Most of the latter clear up in from three to four weeks, while others become true chronic carriers.

The chronic bacillus carrier is of especial importance, since to such, more than any other, must be ascribed the persistence of the disease in sporadic form in communities where every precaution is taken to insure a pure water-supply. This fact was most clearly established by the investigations carried on in 1902 in Alsace and Lorraine, where typhoid fever was notoriously in evidence in spite of the utmost effort to control the disease by the ordinary sanitary methods. The conclusions arrived at in the course of those studies have been verified and extended by workers in all parts of the world. The occurrence of typhoid and para-typhoid bacilli in healthy and chronic carriers can hardly be advanced as an argument against the accepted pathogenic rôle of these organisms. The lesson taught by the history of yellow fever and hog cholera might lead us to believe that the above-mentioned organisms were accidental and not causative, and that the real cause might be of an ultra-microscopic character. No experimental evidence, however, has yet been presented in support of this idea. On the contrary, all the known facts, especially the serum reactions, and above all, the remarkable results obtained in the prevention of typhoid fever by inoculation of the dead bacillus point to the etiologic significance of the typhoid germ.

The number of chronic typhoid carriers is not large, being placed by various workers at from 2 to 3 to 5 per cent.; figures which cannot be considered as exact in view of the known imperfections of the methods employed. This low percentage, however, is an encouraging and redeeming feature when one considers that the excretion of the typhoid bacillus by such carriers is not always limited to weeks or months, but may continue for years and perhaps till death. This remarkable persistence of the germ is commonly considered to be due to its localization in, and adaptation to the biliary passages. Its presence in the bile and in biliary calculi is an established fact. Usually, with the bile the organism passes into the intestine to be eliminated with the discharges; less often it enters the circulation and appears in the urine. The fact that the bile is a common avenue of elimination when organisms are introduced into the blood may lead one to suppose that the bacillus is primarily localized elsewhere than in the bile bladder, and such a supposition is not without analogy. A vegetative focus within an organ not only explains the presence of the bacillus in the bile and, at times, in the urine, but also accounts for the fact that in others the elimination is of an intermittent character.

The result of studies on the age and sex distribution of carriers indicates that children are the least, while women are most prone to this condition. The latter fact is noteworthy, since the spread of typhoid fever by carriers engaged in the handling of and preparation of food must be considered as beyond question. The figures which we have showing the relative frequency of infection through such carriers vary considerably, owing to the necessarily different conditions prevailing in different regions. Generally speaking, from 4 to 30 per cent. of the cases of typhoid fever are traceable to the chronic carrier. In localized outbreaks, such as arise in the family, the boarding house, and the like, practically every case may have this origin.

Essentially the same facts which have been developed in connection with diphtheria and typhoid fever hold true for other diseases, such as influenza, meningitis, pneumonic plague, dysentery and cholera. In the matter of cholera it may not be without interest to note that one of the most effective means employed during the past summer to prevent the introduction of cholera into this country was the systematic examination of all third-class passengers coming from infected ports for cholera carriers.

By far the most interesting and instructive example of a disease carrier is that revealed in connection with Malta fever. The cause of this disease, the *Micrococcus melitensis*, has been known for twenty-five years, but the real mode of transmission of the disease was not recognized

until five years ago. It was then shown for the first time, and quite accidentally, that the goat is really a chronic carrier of the disease organism. The studies of the British Commission showed that among the many thousand of goats examined on the Island of Malta, fully 50 per cent. gave the agglutination test, while 10 per cent. were actually secreting the micrococcus in their milk. The existence of the disease among goats was wholly unexpected, but its existence forcibly taught a lesson on the importance of the chronic carrier.

The disease in the goat was so mild as to pass unnoticed. On recovery, however, the specific germ instead of disappearing became localized in the mammary gland and hence appeared in the milk. The use of this milk by man led to his infection with Malta fever. The recognition that this disease was a milk infection enabled the authorities, once and for all, to put an end to the tribute paid by the British army and navy. The simplest precaution, the boiling of the goat's milk or its avoidance, was sufficient to put an end to the scourge.

In many ways Malta fever in man presents a striking analogy to typhoid fever. In both diseases the specific organism persists in the body during convalescence and indeed after full recovery. Their continued elimination in the urine and discharges indicates a localization in some part of the body. In both infection occurs by way of the alimentary tract.

Carriers are by no means restricted to the bacterial diseases, of which but a few have been discussed. They play an even more important part in the propagation of certain protozoal infections. They constitute the natural reservoirs of virus and, as such, are chiefly responsible for the continued existence of these diseases. Thus, cattle which have recovered from Texas fever do not show, on microscopical examination of their blood, any evidence of the presence of the parasite, and yet such blood injected into a healthy animal gives rise to the typical disease. The parasite is clearly present, either in extremely small numbers, or, what is more likely, in an unrecognizable form in the immune animal. The condition is analogous to that observed in the chronic carriers of typhoid fever and other bacterial diseases; it implies that a reciprocal immunity has been established, an armed truce, so to speak, between the host and invader.

In trypanosomal disease chronic carriers are equally in evidence. When recovery occurs, as it does in some animals, the organism, though present in the blood, is practically unrecognizable by means other than inoculation of animals or by artificial cultivation. The culture method had revealed the presence of such trypanosomes in a large percentage of birds, and more recently the same procedure has demonstrated the existence of similar parasites in the cattle of various countries.

The disease caused by submicroscopic or invisible organisms may show this same persistence of the infective agent long after recovery has taken place. A striking example of this fact has but recently been determined in connection with infantile paralysis where the virus has been found to persist in the nasopharynx for many months. The existence of the chronic carrier being recognized, it is no longer surprising to learn of sudden outbreaks of this dangerous disease, apparently spontaneous in character, in a locality where no previous case was known to exist.

#### INVERTEBRATE CARRIERS.

Important as the vertebrate carrier may be, it is quite overshadowed by the enormous importance of the invertebrate carrier. It may be asserted without fear of contradiction that the most valuable results which have been accomplished in preventive medicine in recent years have come from the recognition of the exclusive rôle played by these carriers in the transmission of many diseases. Texas fever, malaria, yellow fever, sleeping sickness, not to mention a score of other infections, find their natural transmission in the agency of insects, ticks and other sanguivorous organisms.

It has been customary for some years to speak of insects as *passive* and as *active carriers*, which terms convey certain well-defined conceptions. The passive carrier is an accidental conveyer rather than a natural host for the germ. A fly feeding upon typhoid excreta may soil its feet or proboscis and on alighting elsewhere may deposit such mechanically adhering particles. The part played by the passive character is merely one of indirect contamination — a purely mechanical transmission of the infective agent from one place to another. This transference of disease organisms to articles of food, or even into wounds by flying insects may lead to infection, and, in fact, it is generally recognized that certain bacterial and even protozoal diseases may thus be spread. Cholera, dysentery, tuberculosis and typhoid fever are most often mentioned in this connection.

The active carrier, on the other hand, is essentially a diseased individual and corresponds in a way to the chronic vertebrate carrier already discussed. Some, however, can be compared more correctly to the healthy carriers. The insect, tick, leech, and the like, which feed upon an infected animal may become a suitable soil for the disease organism, which either multiplies directly, or else passes through a developmental cycle in its new host. It has been supposed by some that active carriers can harbor only animal parasites, such as the pathogenic protozoa and filaria, an assumption which is quite erroneous. It is undoubtedly true that many of the known active carriers do transmit animal parasites, but that

fact is not sufficient to exclude a like transmission of bacteria, nor does it justify the assumption, so freely resorted to, that an unseen and unrecognizable germ which is transmitted by an active carrier is *ipso facto* a protozoön.

The best example of an insect bacillus carrier is seen in bubonic plague, which is spread almost wholly by the bites of fleas which come from naturally infected rats or other rodents. The plague bacillus is present in the blood of the diseased animal, usually some hours before death, and the flea which sucks up such blood into its stomach becomes infected with a variable number of the organisms. These then undergo multiplication in the digestive tube, and persist therein for four to ten to twenty-one days, depending upon the temperature, method of feeding, and perhaps on factors inherent in the flea itself. There is no evidence that the flea is affected in any way by the presence of the bacillus, which leaves the body chiefly, if not entirely, along with the feces. The contact of this excretal matter with the wound is perhaps the chief means by which infection occurs. It is clear, therefore, that the flea is not a mere passive carrier, but an actual host (a healthy carrier), even though the parasite is unable to maintain a very prolonged existence within its digestive tube.

The common rat flea is also one of the agents which brings about the transmission of a protozoal disease among rats, namely, *Trypanosoma Lewisi*. Opinions have differed as to the part played by the flea in the transmission of this infection, as to whether it was a mere passive, or a real active carrier. But recent studies have shown clearly that passive transmission, in this as in other trypanosomatic diseases, though possible, is of no special consequence; and that the flea is a true host, an active carrier. The work of Minchin and Thomson indicates the existence of an intracellular multiplication of the parasite in the epithelial cells of the mid-gut, as a result of which the trypanosome breaks up into a number, possibly eight, daughter trypanosomes, which then become free and undergo further development and multiplication. The period of incubation is six to seven days or more, but the insect once infected remains so for an indefinite period. Regurgitation of the ripe infective form from the stomach of the flea into the wound made by the proboscis of the flea is, according to these investigators, the normal method of transmission.

Incidentally it may be stated that evidence has been presented, though it cannot be said to be conclusive, which goes to show that the dog flea is responsible for the spread of the disease known as infantile kala-azar. Further investigation is needed to determine the mode of transmission of this deadly infection.

The tick family is an extremely important group as regards the trans-

mission of disease of man and animals. The infective agent may be a bacillus, a spirochete; or a typical protozoön such as a piroplasm or a trypanosome. For example, we know from the splendid studies of Ricketts on the so-called Rocky Mountain fever, also known as "spotted" or "tick" fever, that this disease is due in all probability to a bacillus, and, furthermore, that this is invariably transmitted by the bite of a tick, or of its offspring.

The spirochetes which many workers, following the lead of Schaudinn, believed to be protozoa are now rarely classed as such even by zoölogists. Instead, they have either been turned back among the spiral bacteria, or have been given a separate position, intermediate between them and the protozoa. This fact is of interest because most of the spirochetal diseases are transmitted through the agency of active carriers, such as the louse and especially ticks. The best example of the latter type of infection is the African tick fever, which is closely identified with the ordinary relapsing fever. The active carrier in this case is the tick, *Ornithodoros moubata*, which not only can transmit the disease directly, but can also do so through its offspring. A spirochetal disease of chicken is similarly transmitted by another tick, *Argas miniatus*.

Our knowledge regarding the change which the spirochete undergoes in the tick and in the egg is by no means complete. Thus, while some workers, such as Koch, described the presence of the spiral organism in the internal organs and in the eggs, other observers have failed to demonstrate their presence. Leishman, a most careful worker, was, as a rule, unable to detect recognizable spirochetes later than the tenth day after ingestion by the ticks. Instead, he observed clumps of chromatin granules which were also invariably present in the eggs, larvæ and nymphs derived from infected ticks. The spirochete origin of these granules is uncertain, especially since similar granules were found in nymphs derived from ticks fed on normal blood.

The infection of a healthy animal by a tick may occur, either by the injection of spirochetes with the salivary secretion, or by regurgitation of infective material from the gut, but neither of these modes of infection can be considered as common. Instead, it appears from the work of Leishman and of Hindle that infection is the result of excretion of infective material from the Malpighian tubules and gut, which enters the open wound caused by the tick's bite. This contaminative wound infection is therefore similar to that already noted in connection with the flea and bubonic plague.

The Texas fever of cattle, as is well known, was the first disease in which transmission through the agency of an insect or arthropod was demonstrated. The facts presented by Smith and Kilborne twenty years

ago hold to-day. Thanks to that work which served to open up the entire field of invertebrate carriers, we know that the disease is not transferred directly by the tick which has fed upon an infected animal, but indirectly through the young ticks which hatch from its eggs. The pathogenic agent in this case is a typical intracellular protozoön, the *Piroplasma*. Similar piroplasmatic diseases are met with in a variety of domestic animals, and in all such cases transmission is effected by ticks at one stage or another of their development.

In addition to the foregoing types of organisms which are transmitted by ticks, passing mention may be made of the common trypanosome infection of cattle, already referred to, which in all probability owes its presence to this group of ectoparasites.

The recognition of mosquito-borne diseases marks one of the most important advances in modern times. Thanks to the work of Ross, Grassi and many others we learned that malaria was transmitted solely through the bite of the mosquito. The life history of the parasite in the *Anopheles* has been traced, most completely, from the moment when it enters the stomach with the ingested blood, until it leaves the insect by way of the salivary secretion.

Barely a decade has passed since yellow fever was shown by Reed and his co-workers to be similarly transmitted, though by another genus of mosquito, the *Stegomyia*. The cause of the disease escaped their search, and for that matter is still unknown, but the practical results which followed from their work culminated in the complete conquest of a hitherto uncontrolled scourge.

Did time permit, some consideration could be given to insect carriers, such as the body louse, which has to do with the transmission of relapsing fever and typhus fever in man, and the trypanosome infection in the common rat; the bedbug, which has often attracted attention in connection with plague, relapsing fever and kala-azar; and to the sand-fly, which has recently been shown to be responsible for the pappataci fever, which is due, like dengue and yellow fever, to a filterable, invisible virus. It will be better to pass these by and consider briefly a vastly more important carrier, the tsetse fly.

Curiously enough, the tsetse-fly disease of South Africa was the first disease clearly recognized as insect-borne. The natives, as well as the early travelers, realized that the bite of the tsetse fly caused sickness and death of the animals thus bitten. The work of Bruce in 1894 proved this relation, and at the same time demonstrated that the disease was due to a blood parasite, since named *Tr. Brucei*. At that time Bruce was led to believe that the fly was infective for but a few hours, or at most a day or two after an infective feed. In other words, the fly was thought to be a passive carrier, simply carrying the parasite from one animal to

another. This view has been definitely set aside as a result of the studies of the past two years. Mechanical transmission, especially where interrupted feeding occurs, is possible, but that this is the natural way is no longer believed. That the tsetse fly obtained its infection from the wild animals was a reasonable supposition, which was soon confirmed by special examinations. The important fact was established that the wild animal, recovering from the infection, became a chronic carrier, and as such served as a natural reservoir of the virus. As long as such wild animals existed the fly could infect itself and transmit the disease to the passing domestic animal. The introduction of rinderpest into South Africa is said to have brought about the destruction of wild animals to such an extent as to render this disease a negligible quantity in that region.

Especial interest centers about the tsetse fly because of its relation to sleeping sickness, which is caused by the *Trypanosoma gambiense*. While the fly, *Glossina palpalis*, is chiefly responsible for the spread of this disease, there is reason to believe that other species of tsetse flies can likewise serve as carriers. Attempts to eradicate the disease by removing all of the natives from certain regions have failed to accomplish the desired result. The tsetses undoubtedly obtain their infection from some other source than diseased man. This natural reservoir of the virus has not as yet been discovered, although from experiments made on antelopes it is not unlikely that these or related animals constitute the chronic carrier from which the infection is transmitted to man by the fly.

The question as to whether the tsetse fly could act as an active carrier was finally settled by Kleine (1909) and confirmed by Bruce and his co-workers. It is now known that flies which feed upon infected animals remain harmless for a period of about three weeks. After that time, however, they become infective and apparently remain so during the remainder of their lives. Only a small percentage of the flies thus fed become infected. The changes which the trypanosome undergoes in the fly are but partly known. Whether this parasite has an intracellular stage, such as has been observed in fleas infected with *Tr. Lewisi*, remains to be demonstrated. It is certain, however, that *Tr. gambiense*, when it once adapts itself to the conditions in the digestive tube of the fly, then multiplies in much the same way as it would in the culture tube. It is an interesting fact that when blood containing *Tr. brucei* is planted on a suitable culture medium an incubation period of from two to three weeks is necessary to bring about this adaptation. It is not unreasonable to believe that the changes which take place in the test tube are not unlike those which occur within the digestive tube of the fly. The successful cultivation of *Tr. gambiense* has not as yet been realized, and hence comparison of the two cannot be made.



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OF

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING AUG. 3, 1912.

CITIES AND TOWNS.	Population, Cen- sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal In- fectious Dis- eases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	211	59	63	18	16	—	—	—	—	—	—
Worcester, .	145,986	51	16	15	5	4	—	—	—	—	—	—
Fall River, .	119,295	50	27	30	2	5	—	—	—	—	—	—
Lowell, .	106,294	30	17	7	3	1	—	—	—	—	—	—
Cambridge, .	104,839	24	9	10	1	4	—	—	—	—	—	—
New Bedford, .	96,652	31	15	20	2	5	—	—	—	—	—	—
Lynn, .	89,336	16	3	1	1	—	—	—	—	—	—	—
Springfield, .	88,926	18	8	9	1	2	—	—	—	—	—	—
Lawrence, .	85,892	28	15	14	3	1	—	—	—	—	—	—
Somerville, .	77,236	14	5	4	1	2	—	—	—	—	—	—
Holyoke, .	57,730	17	13	—	—	—	—	—	—	—	—	—
Brockton, .	56,878	7	3	3	—	—	—	—	—	—	—	—
Malden, .	44,404	7	—	—	—	—	—	—	—	—	—	—
Haverhill, .	44,115	10	3	1	—	—	—	—	—	—	—	—
Salem, .	43,697	13	2	5	—	—	—	—	—	—	—	—
Newton, .	39,806	7	—	3	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	5	4	6	—	—	—	—	—	—	—	—
Taunton, .	34,259	14	7	8	1	2	—	—	—	—	—	—
Everett, .	33,484	7	2	2	—	—	—	—	—	—	—	—
Quincy, .	32,642	4	1	1	—	—	—	—	—	—	—	—
Chelsea, .	32,452	12	4	3	—	—	—	—	—	—	—	—
Pittsfield, .	32,121	14	5	6	—	—	—	—	—	—	—	—
Waltham, .	27,834	4	2	—	—	—	—	—	—	—	—	—
Brookline, .	27,792	4	1	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	11	7	6	—	—	—	—	—	—	—	—
Gloucester, .	24,398	5	—	—	—	—	—	—	—	—	—	—
Medford, .	23,150	9	5	1	—	—	—	—	—	—	—	—
North Adams, .	22,019	3	1	—	—	—	—	—	—	—	—	—
Northampton, .	19,431	8	2	6	—	—	—	—	—	—	—	—
Beverly, .	18,650	3	1	—	—	—	—	—	—	—	—	—
Revere, .	18,219	3	—	1	—	—	—	—	—	—	—	—
Leominster, .	17,580	6	2	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	2	0	1	—	—	—	—	—	—	—	—
Westfield, .	16,044	6	4	2	—	—	—	—	—	—	—	—
Peabody, .	15,721	4	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	5	0	1	—	—	—	—	—	—	—	—
Woburn, .	15,308	5	1	2	—	—	—	—	—	—	—	—
Newburyport, .	14,949	2	1	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	—	—	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	1	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	2	—	—	—	—	—	—	—	—	—
Milford, .	13,055	4	3	2	—	—	—	—	—	—	—	—
Adams, .	13,026	3	2	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	1	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	6	3	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	4	1	—	—	—	—	—	—	—	—	—
Webster,	11,509	3	2	—	—	—	—	—	—	—	—	—
Methuen,	11,448	2	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	0	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	1	—	—	—	—	—	—	—	—
Greenfield, .	10,427	2	2	—	1	—	—	—	—	—	—	—
Winthrop, .	10,132	1	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of report- ing towns, .	2,578,786	705	261	235	44	56	13	3	2	2	4	3
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WEEK ENDING AUG. 10, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	191	55	66	10	16	4	2	-	-	-
Worcester, .	145,986	38	18	9	3	3	1	1	-	-	1
Fall River, .	119,295	31	18	17	3	3	3	-	-	-	-
Lowell, .	106,294	27	15	9	1	1	-	-	-	-	-
Cambridge, .	104,839	13	3	4	1	3	5	-	-	-	-
New Bedford, .	96,652	43	23	25	5	2	1	1	1	1	-
Lynn, .	89,336	24	13	5	1	1	3	-	-	-	-
Springfield, .	88,926	34	5	8	1	1	1	1	1	1	1
Lawrence, .	85,892	32	13	15	3	1	1	-	-	-	-
Somerville, .	77,236	15	7	6	1	1	1	-	-	-	-
Holyoke, .	57,730	9	-	9	-	-	-	-	-	-	-
Brockton, .	56,878	17	5	3	-	-	2	-	-	-	-
Malden, .	44,404	7	1	3	-	-	1	-	-	-	-
Haverhill, .	44,115	14	4	2	1	1	-	-	-	-	-
Salem, .	43,697	15	4	3	1	1	1	-	-	-	-
Newton, .	39,806	9	-	1	-	-	-	-	-	-	-
Fitchburg, .	37,826	9	5	1	-	-	-	-	-	-	-
Taunton, .	34,259	15	8	8	-	-	3	-	-	-	-
Everett, .	33,484	8	1	-	-	-	-	-	-	-	-
Quincy, .	32,642	7	3	1	-	-	-	-	-	-	1
Chelsea, .	32,452	3	-	-	-	-	-	-	-	-	-
Pittsfield, .	32,121	7	3	2	-	-	-	-	-	-	-
Waltham, .	27,834	5	2	-	-	-	-	-	-	-	-
Brookline, .	27,792	8	3	-	-	-	-	-	-	-	-
Chicopee, .	25,401	12	6	5	-	-	-	1	-	-	-
Gloucester, .	24,398	8	3	2	-	-	-	-	-	-	-
Medford, .	23,150	4	1	1	-	-	1	-	-	-	-
North Adams, .	22,019	6	2	2	-	-	1	-	-	-	-
Northampton, .	19,431	7	2	3	-	-	1	-	-	-	-
Beverly, .	18,650	4	-	-	-	-	-	-	-	-	-
Revere, .	18,219	5	-	-	-	-	1	-	-	-	-
Leominster, .	17,580	2	-	-	-	-	-	-	-	-	-
Attleborough, .	16,215	5	1	1	-	-	-	-	-	-	-
Westfield, .	16,044	9	3	2	-	-	-	-	-	-	1
Peabody, .	15,721	3	2	3	-	-	-	-	-	-	-
Melrose, .	15,715	6	1	1	-	-	1	-	-	-	-
Woburn, .	15,308	3	1	1	1	1	2	-	-	-	-
Newburyport, .	14,949	5	1	1	-	-	-	-	-	-	-
Gardner, .	14,699	-	-	-	-	-	-	-	-	-	-
Marlborough, .	14,579	3	0	-	-	-	-	-	-	-	-
Clinton, .	13,075	3	-	-	-	-	-	-	-	-	-
Milford, .	13,055	0	-	-	-	-	-	-	-	-	-
Adams, .	13,026	5	2	-	-	-	-	-	-	-	-
Framingham, .	12,948	3	1	-	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	3	1	1	-	-	-	-	-	-	-
Southbridge, .	12,592	5	2	1	-	-	-	-	-	-	-
Plymouth, .	12,141	2	-	-	-	-	-	-	-	-	-
Webster, .	11,509	4	1	-	-	-	-	-	-	-	-
Methuen, .	11,448	4	2	-	-	-	-	-	-	-	-
Wakefield, .	11,404	1	-	-	-	-	-	-	-	-	-
Arlington, .	11,187	1	-	-	-	-	-	-	-	-	-
Greenfield, .	10,427	2	-	-	-	-	-	-	-	-	-
Winthrop, .	10,132	6	-	-	-	-	-	-	-	-	-

## Recapitulation.

Total of report-ing towns, .	2,578,786	702	248	222	31	48	10	5	2	-	2	4
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WEEK ENDING AUG. 17, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis Pulmonary, (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Menses.
Boston, .	686,092	200	64	72	11	19	—	—	2	—	4
Worcester, .	145,986	49	23	13	5	3	—	—	1	—	—
Fall River, .	119,295	29	13	15	2	1	—	—	—	—	—
Lowell, .	106,294	33	18	5	—	4	—	—	—	—	—
Cambridge, .	104,839	23	4	7	2	—	—	—	—	—	—
New Bedford, .	96,652	32	15	9	—	1	—	—	—	—	—
Lynn, .	89,336	18	8	5	2	—	—	—	—	—	—
Springfield, .	88,926	21	9	9	—	—	—	—	—	—	—
Lawrence, .	85,892	41	14	12	2	2	—	—	—	—	—
Somerville, .	77,236	20	3	3	—	3	—	—	—	—	—
Holyoke, .	57,730	5	—	5	1	—	—	—	—	—	—
Brockton, .	56,878	15	6	5	—	—	—	—	—	—	—
Malden, .	44,404	13	4	2	1	—	—	—	—	—	—
Haverhill, .	44,115	14	3	5	—	—	—	—	—	—	—
Salem, .	43,697	18	7	4	—	—	—	—	—	—	—
Newton, .	39,806	8	2	1	—	—	—	—	—	—	—
Fitchburg, .	37,826	5	2	2	—	—	—	—	—	—	—
Taunton, .	34,259	14	6	8	1	—	—	—	—	—	—
Everett, .	33,484	6	4	2	1	—	—	—	—	—	—
Quincy, .	32,642	8	3	4	—	—	—	—	—	—	—
Chelsea, .	32,452	14	6	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	15	5	5	—	—	—	—	—	—	—
Waltham, .	27,834	6	0	1	—	—	—	—	—	—	—
Brookline, .	27,792	4	—	1	—	—	—	—	—	—	—
Chicopee, .	25,401	8	6	4	—	—	—	—	—	—	—
Gloucester, .	24,398	5	2	1	—	—	—	—	—	—	—
Medford, .	23,150	6	—	1	—	—	—	—	—	—	—
North Adams, .	22,019	11	3	4	—	—	—	—	—	—	—
Northampton, .	19,431	9	2	5	—	—	—	—	—	—	—
Beverly, .	18,650	3	—	1	—	—	—	—	—	—	—
Revere, .	18,219	3	—	1	—	—	—	—	—	—	—
Leominster, .	17,580	0	—	1	—	—	—	—	—	—	—
Attleborough, .	16,215	7	4	2	—	—	—	—	—	—	—
Westfield, .	16,044	4	0	1	—	—	—	—	—	—	—
Peabody, .	15,721	5	3	1	—	—	—	—	—	—	—
Melrose, .	15,715	2	—	1	—	—	—	—	—	—	—
Woburn, .	15,308	2	—	2	—	—	—	—	—	—	—
Newburyport, .	14,949	4	—	1	—	—	—	—	—	—	—
Gardner, .	14,699	—	—	1	—	—	—	—	—	—	—
Marlborough, .	14,579	4	0	1	—	—	—	—	—	—	—
Clinton, .	13,075	5	1	1	—	—	—	—	—	—	—
Milford, .	13,055	3	1	1	—	—	—	—	—	—	—
Adams, .	13,026	6	2	1	—	—	—	—	—	—	—
Framingham, .	12,948	3	—	1	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	1	—	—	—	—	—	—	—
Watertown, .	12,875	4	3	1	—	—	—	—	—	—	—
Southbridge, .	12,592	3	2	1	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	1	—	—	—	—	—	—	—
Webster, .	11,509	5	5	1	—	—	—	—	—	—	—
Methuen, .	11,448	2	1	—	—	—	—	—	—	—	—
Wakefield, .	11,404	4	—	2	—	—	—	—	—	—	—
Arlington, .	11,187	3	1	—	—	—	—	—	—	—	—
Greenfield, .	10,427	1	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	5	2	2	—	—	—	—	—	—	1

## Recapitulation.

Total of reporting towns, .	2,578,786	730	262	225	31	50	12	6	5	-	-	9
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WEEK ENDING AUG. 24, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	DEATHS FROM —																
		Reported Deaths in Each.			Deaths under Five Years.			Principal Infectious Diseases.			Tuberculosis, Pulmonary (or not classified).			Tuberculosis, other than Pulmonary.				
		Reported	Deaths					Acute	Lung Diseases.					Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	214	79		78	14		20		4								2
Worcester, .	145,986	38	21		11	1		3		1								1
Fall River, .	119,295	33	14		19	2		3		1								1
Lowell, .	106,294	32	18		5	1		8		1								1
Cambridge, .	104,839	17	3		12	1		1		1								1
New Bedford, .	96,652	38	20		15	1		1		1								1
Lynn, .	89,336	20	7		3			1		1								1
Springfield, .	88,926	24	10		10			1		1								1
Lawrence, .	85,892	32	16		17	4		2		1								1
Somerville, .	77,236	9	1		1			1		1								1
Holyoke, .	57,730	3	—		3			1		1								1
Brockton, .	56,878	8			4			—		1								1
Malden, .	44,404	14	3		3			—		2								1
Haverhill, .	44,115	12	2		4			—		—								1
Salem, .	43,697	8	1		3			2		1								1
Newton, .	39,806	6	—		2			1		1								1
Fitchburg, .	37,826	12	6		1			—		1								1
Taunton, .	34,259	18	8		7			—		1								1
Everett, .	33,484	9	2		3			1		1								1
Quincy, .	32,642	9	7		6			—		—								1
Chelsea, .	32,452	17	5		7			3		1								1
Pittsfield, .	32,121	19	6		8			1		—								1
Waltham, .	27,834	7	2		2			1		—								1
Brookline, .	27,792	1	—		—			—		—								1
Chicopee, .	25,401	20	16		11			—		—								1
Gloucester, .	24,398	6	2		—			—		—								1
Medford, .	23,150	8	4		3			—		2								1
North Adams, .	22,019	6	2		1			—		1								1
Northampton, .	19,431	7	2		2			—		—								1
Beverly, .	18,650	2	1		—			—		—								1
Revere, .	18,219	2	1		3			—		—								1
Leominster, .	17,580	8	3		3			—		—								1
Attleborough, .	16,215	2	1		—			—		—								1
Westfield, .	16,044	9	2		3			—		2								1
Peabody, .	15,721	2	—		—			—		—								1
Melrose, .	15,715	1	1		1			—		—								1
Woburn, .	15,308	5	1		2			2		1								1
Newburyport, .	14,949	7	2		2			2		—								1
Gardner, .	14,699	—	0		1			—		—								1
Marlborough, .	14,579	3	0		—			—		1								1
Clinton, .	13,075	5	2		—			—		—								1
Milford, .	13,055	6	2		—			—		—								1
Adams, .	13,026	2	1		—			—		—								1
Framingham, .	12,948	2	1		1			—		—								1
Weymouth, .	12,895	—	—		—			—		—								1
Watertown, .	12,875	7	1		—			—		—								1
Southbridge, .	12,592	4	3		3			—		—								1
Plymouth, .	12,141	4	2		2			—		—								1
Webster, .	11,509	3	0		1			—		—								1
Methuen, .	11,448	4	1		—			—		—								1
Wakefield, .	11,404	1	—		—			—		—								1
Arlington, .	11,187	0	—		—			—		—								1
Greenfield, .	10,427	1	—		—			—		—								1
Winthrop, .	10,132	2	—		—			—		—								1

## Recapitulation

Total of reporting towns, .	2,578,786	729	282	260	36	52	13	8	5	—	2	4
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WEEK ENDING AUG. 31, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	192	64	77	13	13	—	—	—	—	—	2
Worcester, .	145,986	40	18	5	1	2	—	—	—	—	—	—
Fall River, .	119,295	54	29	30	5	1	—	—	—	—	—	—
Lowell, .	106,294	24	9	3	1	1	—	—	—	—	—	—
Cambridge, .	104,839	21	7	16	3	4	—	—	—	—	—	—
New Bedford, .	96,652	35	21	20	1	3	—	—	—	—	—	—
Lynn, .	89,336	18	8	2	—	—	—	—	—	—	—	—
Springfield, .	88,926	23	4	6	—	—	—	—	—	—	—	—
Lawrence, .	85,892	20	7	5	1	—	—	—	—	—	—	—
Somerville, .	77,236	10	2	2	—	—	—	—	—	—	—	—
Holyoke, .	57,730	24	11	10	1	1	—	—	—	—	—	—
Brockton, .	56,878	16	6	6	—	—	—	—	—	—	—	—
Malden, .	44,404	6	1	1	—	—	—	—	—	—	—	—
Haverhill, .	44,115	6	3	4	2	—	—	—	—	—	—	—
Salem, .	43,697	12	6	5	—	—	—	—	—	—	—	—
Newton, .	39,806	13	3	2	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	17	7	7	—	—	—	—	—	—	—	—
Taunton, .	34,259	13	5	1	—	—	—	—	—	—	—	—
Everett, .	33,484	5	1	1	—	—	—	—	—	—	—	—
Quincy, .	32,642	3	—	1	—	—	—	—	—	—	—	—
Chelsea, .	32,452	12	2	2	1	—	—	—	—	—	—	—
Pittsfield, .	32,121	12	6	2	—	—	—	—	—	—	—	—
Waltham, .	27,834	10	3	1	—	—	—	—	—	—	—	—
Brookline, .	27,792	7	1	1	—	—	—	—	—	—	—	—
Chicopee, .	25,401	16	10	6	—	—	—	—	—	—	—	—
Gloucester, .	24,398	16	3	3	—	—	—	—	—	—	—	—
Medford, .	23,150	5	—	1	—	—	—	—	—	—	—	—
North Adams, .	22,019	8	1	3	1	—	—	—	—	—	—	—
Northampton, .	19,431	13	2	3	—	—	—	—	—	—	—	—
Beverly, .	18,650	4	—	1	—	—	—	—	—	—	—	—
Revere, .	18,219	5	2	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	5	1	1	—	—	—	—	—	—	—	—
Attleborough, .	16,215	2	2	2	—	—	—	—	—	—	—	—
Westfield, .	16,044	4	3	2	—	—	—	—	—	—	—	—
Peabody, .	15,721	3	2	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	1	—	1	—	—	—	—	—	—	—	—
Woburn, .	15,308	3	1	1	—	—	—	—	—	—	—	—
Newburyport, .	14,949	2	1	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	—	—	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	3	3	2	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	1	—	—	—	—	—	—	—	—	—
Milford, .	13,055	0	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	4	2	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	5	2	3	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	0	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	3	—	1	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	—	1	—	—	—	—	—	—	—	—
Webster, .	11,509	5	4	4	—	—	—	—	—	—	—	—
Methuen, .	11,448	2	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	7	—	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	1	1	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	0	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,578,786	719	266	249	32	49	8	1	9	-	3	3
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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**DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF AUG. 3, 10, 17, 24 AND 31, 1912.**

DISEASE.	Place.	WEEK ENDING —				
		Aug. 3.	Aug. 10.	Aug. 17.	Aug. 24.	Aug. 31.
Diarrhoeal diseases,	Boston, . .	21	31	29	32	39
	Worcester, . .	3	3	3	6	2
	Fall River, . .	22	13	12	11	23
	Lowell, . .	2	3	2	3	1
	Cambridge, . .	4	—	1	2	8
	New Bedford, . .	10	19	9	13	15
	Lynn, . .	—	1	—	1	—
	Springfield, . .	3	3	5	8	1
	Lawrence, . .	9	8	7	12	2
	Somerville, . .	—	4	—	—	—
	Holyoke, . .	11	9	4	3	8
	Brockton, . .	2	—	2	—	4
	Malden, . .	—	2	—	—	1
	Haverhill, . .	1	—	3	1	2
	Salem, . .	2	1	4	—	4
	Newton, . .	—	1	—	—	5
	Fitchburg, . .	—	—	1	—	1
	Taunton, . .	5	4	5	5	1
	Quincy, . .	—	—	2	6	—
	Chelsea, . .	1	—	—	2	—
	Pittsfield, . .	4	2	2	7	1
	Chicopee, . .	5	4	4	9	4
	Gloucester, . .	—	1	—	—	—
	Medford, . .	—	—	—	1	—
	North Adams, . .	—	2	2	—	2
	Northampton, . .	2	2	2	2	1
	Leominster, . .	—	—	—	3	1
	Attleborough, . .	—	—	2	—	2
	Westfield, . .	—	1	—	—	—
	Melrose, . .	—	—	1	1	—
	Woburn, . .	—	—	2	1	—
	Milford, . .	2	—	—	—	—
	Adams, . .	—	—	1	—	—
	Marlborough, . .	—	—	—	—	2
	Framingham, . .	—	1	—	1	2
	Watertown, . .	—	1	—	—	—
	Southbridge, . .	1	1	1	—	1
	Plymouth, . .	—	—	—	2	1
	Webster, . .	2	—	1	—	4
	Arlington, . .	—	—	—	—	1
	Winthrop, . .	—	—	1	—	—
Cerebro-spinal meningitis.	Boston, . .	1	1	1	1	2
	Pittsfield, . .	1	—	1	—	—
Meningitis (other than cerebro-spinal).	Malden, . .	—	—	—	1	—
	Westfield, . .	—	—	—	—	1
	Framingham, . .	—	—	—	—	1

DEATHS FROM INFECTIOUS DISEASES, ETC.—*Concluded.*

DISEASE.	Place.	WEEK ENDING—				
		Aug. 3.	Aug. 10.	Aug. 17.	Aug. 24.	Aug. 31.
Erysipelas, . . .	Boston, . . .	-	1	1	2	-
Puerperal fever, . .	Boston, . . . Fall River, Springfield, . .	1 1 2	- - -	- - 1	2 2 -	1 - -
Anterior poliomyelitis,	Springfield, .	1	1	-	-	-

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
AUGUST 3, 10, 17, 24 and 31, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—					
	Aug. 3.	Aug. 10.	Aug. 17.	Aug. 24.	Aug. 31.	Total.
Diphtheria, . . . . .	59	85	63	50	66	323
Measles, . . . . .	101	80	71	62	49	363
Scarlet fever, . . . . .	52	42	28	42	32	196
Typhoid fever, . . . . .	38	51	88	94	61	332
Tuberculosis, pulmonary (or not classified), . . . . .	121	126	136	140	123	646
Tuberculosis, other than pulmonary, . . . . .	8	7	6	6	3	30
Cerebro-spinal meningitis, . . . . .	3	3	2	2	—	10
Meningitis, other than cerebro-spinal, . . . . .	—	—	—	2	2	4
Whooping cough, . . . . .	30	31	55	52	29	197
Varicella, . . . . .	16	15	6	13	7	57
Ophthalmia neonatorum, . . . . .	35	30	28	31	35	159
Anterior poliomyelitis, . . . . .	15	7	7	4	3	36
Mumps, <sup>1</sup> . . . . .	7	5	2	3	—	17
Smallpox, . . . . .	—	1	2	2	—	5
Trachoma, . . . . .	—	—	—	3	—	3
Erysipelas, <sup>1</sup> . . . . .	—	—	—	—	—	—
Malaria, . . . . .	2	2	2	3	—	9
Trichinosis, . . . . .	—	—	—	—	1	1
Tetanus, . . . . .	2	—	—	—	—	2

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of August, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	1	-	1	Meat products:—			
Condensed milk, . . .	-	1	1	H a m b u r g			
Confectionery, . . .	1	-	1	steak, . . .	1	-	1
Cream, . . .	2	-	2	Mince meat, . . .	1	-	1
Drugs, . . .	153	23	176	Milk, . . .	288	153	441
Eggs, . . .	5	-	5	Olive oil, . . .	6	1	7
Flavoring extracts:—				Salad dressing, . . .	1	-	1
Vanilla, . . .	6	-	6	Salad oil, . . .	1	-	1
Fruit juices:—				Table sauce, . . .	1	-	1
Grape, . . .	1	-	1	Yeast, . . .	4	-	4
Lime, . . .	4	1	5	Total, . . .	478	179	657
Pineapple, . . .	1	-	1				
Maple syrup, . . .	1	-	1				

The samples of drugs found to be adulterated were alcohol, morphine tablets, spirit of camphor, spirit of nitrous ether, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were: Arlington, Bedford, Beverly, Billerica, Boston, Brookline, Carlisle, Chelmsford, Chelsea, Chicopee, Clinton, Danvers, Gloucester, Holyoke, Hudson, Lawrence, Lowell, Lynn, Malden, Marblehead, Medford, Melrose, Middleborough, Middleton, Milford, Nahant, Natick, Newburyport, North Andover, North Attleborough, Oak Bluffs, Onset, Pittsfield, Quincy, Revere, Salem, Spencer, South Framingham, Somerville, Springfield, Tyringham, Waltham, Watertown, West Newbury, Weymouth, Whitman, Winchester, Winthrop, Woburn.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Ten convictions were secured during the month of August, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Arthur E. Cox, . . . .	Boston, . .	Lime juice (45 per cent. added water; no statement on label).
2	Ira Cheney, . . . .	Saugus, . .	Milk (total solids 11.68). <sup>1</sup>
3	DeWitt C. Heath, . . . .	Tyringham, . .	Milk (total solids 5.64). <sup>1</sup>
4	Martin Kennelly, . . . .	Billerica, . .	Milk (total solids 11.10). <sup>1, 2</sup>
5	Edward Lapham, Jr., . . . .	Carlisle, . .	Milk (total solids 11.12). <sup>1</sup>
6	Thomas E. Spittle, . . . .	Gloucester, . .	Milk (total solids 9.32). <sup>1, 2</sup>
7	Robert W. Stowell, . . . .	Lowell, . .	Milk (total solids 11.48). <sup>1, 2</sup>
8	George E. Waldron, . . . .	Gloucester, . .	Milk (total solids 7.68). <sup>1, 2</sup>
9	A. F. Glesman, . . . .	Holyoke, . .	Spirits of anise (about 0.1 oil).
10	Aaron Feldman, . . . .	Boston, . .	Spirits of peppermint (1.6 per cent. peppermint oil).

<sup>1</sup> Watered.

<sup>2</sup>Appealed.

Fines imposed, \$400.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR AUGUST, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
3016-O	Square Brand Condensed Skimmed Milk,	Hire's Condensed Milk Company, Philadelphia, Pa.,	No statement of proper dilution to give standard skimmed milk.
2778-O	Spirit of peppermint,	A. Feldman, Boston, Mass.	16 per cent. U. S. P. strength.
3004-O	Spirit of peppermint,	Transfer Pharmacy, S. W. Williams, South Boston, Mass.,	64 per cent. U. S. P. strength.
17860	Milk,	Michael J. Flaherty, Elmwood, Mass.,	Total solids, 10.98 per cent.; fat, 3.40 per cent.; contained added water.
q 9347	Milk,	Arthur C. Fillmore, Hudson, Mass.,	Total solids, 10.48 per cent.; fat, 2.80 per cent.; contained added water.
q 9356	Milk,	Charles L. Elliot, Jr., Danvers, Mass.,	Total solids, 10.10 per cent.; fat, 3.40 per cent.; contained added water.
3224-O	Milk,	Anton W. Swanson, North Billerica, Mass.,	Total solids, 11.36 per cent.; fat, 3.70 per cent.; contained added water.
q 9365	Milk,	John E. Higgins, Danvers, Mass.,	Total solids, 10.14 per cent.; fat, 1.80 per cent.; proteins, 3.18 per cent.; skimmed milk.
q 9467	Milk,	Arthur F. Sherman, East Weymouth, Mass.,	Total solids, 12.08 per cent.; fat, 2.85 per cent.; proteins, 3.96 per cent.; skimmed milk.
755 S	Milk,	De Witt C. Heath, Tyringham, Mass.,	Total solids, 9.68 per cent.; fat, 2.50 per cent.; contained added water.
757 S			Total solids, 9.94 per cent.; fat, 2.60 per cent.; contained added water.
759 S			Total solids, 10.65 per cent.; fat, 2.90 per cent.; contained added water.
761 S			Total solids, 5.64 per cent.; fat, 1.55 per cent.; contained added water.

## **INSPECTION OF DAIRIES.**

During the month of August, 1912, 67 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Barnstable, . . . .	37	29	78.38	8	21.62
Second inspection, . . . .	5	3	60.00	2	40.00
Lexington, . . . .	9	5	55.56	4	44.44
Third inspection, . . . .	12	10	83.33	2	16.67
Fourth inspection, . . . .	1	1	100.00	-	-
Swampscott, . . . .	1	1	100.00	-	-
Third inspection, . . . .	2	2	100.00	-	-

Total number of dairies examined, . . . . .	67
Number found to be free from objectionable conditions, . . . . .	51
Number concerning which letters were sent, . . . . .	16
Total number of conditions to which attention was called, . . . . .	57
Percentage of dairies which passed inspection, . . . . .	76.12

Included in the total number of dairies visited were 47 which had recently started in the milk-producing business and were inspected for the first time.

In addition to the above, 9 dairies were visited at which the sale of milk had been discontinued.

The names of the owners of the dairies found to be worthy of commendation follow:—

## BARNSTABLE.

*Class A.*

Bacon, Hon. Robert W.\* †      Davis, J. S.      Linnell, Frank \* †  
Bates, Elmer      Everett, Henry C.

*Class B.*

Bassett, Charles	Fish, George F.	Makepeace, W. F.
Blossom, Benjamin H.	Harris, Marcus H.	Mecarta, Mrs. Betsy
Bursley, John	Howland, Ellsworth	Morse, Henry
Cammett, E. B.	Jenkins, Henry W.	Parker, Herbert N.
Cammett, W. B.	Jenkins, Joseph	Shuley, M. F.
Coleman, William	Kleinschmidt, William	Thomas, George
Crocker, Nelson	Lawrence, Andrew	"Town Farm"
Crosby, Aaron S.	Lehman, Victor	Weeks, Alonzo
Ellis, Frank	Lewis, Lorenzo	Woodbury, George *

#### \* Second inspection

t Reported favorably on first inspection.

## LEXINGTON.

*Class A.*

Martin, William P.

Swansen, Axel M.‡ ||

*Class B.*

Bruce, A.	Kendall Brothers‡	Roberts, George H.‡
Carter, William E.	Kendall, Mrs. Frank P.‡	Ryan, Patrick‡
Dailey, John P.§	Kendall, Stillman D.‡	Traverse, John
Davis, Warren" A.‡	Kinneen, Peter J.‡	Wellington, Herbert L.
Gleason, F. E.‡	Putnam, G. Leslie‡	

## SWAMPSCOTT.

*Class B.*

Gossman, W.‡

Mathers, Joseph

Phillips, L. H.‡

‡ Third inspection.

§ Fourth inspection.

|| Reported favorably on all previous inspections.

THE DETERMINATION OF THE PHENOL COEFFICIENT OF  
SOME COMMERCIAL DISINFECTANTS.<sup>1</sup>

BY THOMAS C. MCCLINTIC.

Requests are constantly received at the hygienic laboratory from health officers and others concerned regarding the use and efficiency of commercial disinfectants. This, taken in conjunction with the large number of the different preparations offered for sale upon the market, is positive evidence of their extensive use as disinfectants throughout the country. They are used by physicians in their private practice, by health officers and sanitarians, and in public buildings, hospitals, etc. While the germicidal efficiency of some of these preparations is comparatively high, in the case of others it is almost nil. It is therefore a matter of vital importance that the germicidal value of the various disinfectants be determined and made known in order to avoid, as far as possible, the untoward results that may, through a sense of false security, follow the use of inert or inferior preparations.

Unfortunately, the manufacturer's claim cannot always be taken as an index of the true value of a preparation as a germicide. It has consequently become incumbent upon the hygienic laboratory, as a public health agency, to take up the work of determining the germicidal properties of preparations that are sold to the public as disinfectants. . . . As there is often objection against the use of disinfectants, the composition and strength of which are unknown, it may be stated here in conclusion that *Liquor cresolis compositus*, United States Pharmacopœia, is an excellent disinfectant from the standpoint of both efficiency and economy. It has a phenol coefficient of 3, and can be prepared on a large scale for about 50 cents per gallon.

Preparations examined in the laboratory, together with their phenol coefficients, follow:—

SAMPLE.	PHENOL COEFFICIENT.	
	Without Organic Matter.	With Organic Matter.
Bacterol, . . . . .	1.58	1.34
Benetol, . . . . .	1.23	.92
Cabot's Sulpho-Naphthol, . . . . .	3.87	2.33
Carbolene, . . . . .	1.36	.65
Carbozone Disinfectant, . . . . .	1.48	.48

<sup>1</sup> Taken in part from Bulletin No. 82, Hygienic Laboratory, United States Public Health and Marine Hospital Service.

SAMPLE.	PHENOL COEFFICIENT.	
	Without Organic Matter.	With Organic Matter.
Car-Sul,	2.00	1.75
Chloro-Naphtholeum Disinfectant,	6.06	3.21
Cremoline,	1.26	.69
Creo-Carboline Disinfectant,	4.03	2.26
Creolin-Pearson,	3.25	2.52
Cresoleum,	2.90	1.75
Crude Carbolic Acid (navy de- partment).	2.75	2.63
Dusenberry's Liquid Creoleum,	1.00	.40
Germol,	2.12	1.79
Hycol,	12.30	9.37
Hygeno A,	3.56	1.81
Kreosota,	1.26	.65
Kreotax,	1.10	.30
Kreso,	3.92	2.32
Kresolig,	2.18	1.48
Lincoln Disinfectant,	1.48	1.10
Liquor Cresolis Compositus (U. S. P.).	3.00	1.87
Lysol,	2.12	1.57
Naphthalene Disinfectant,	2.50	1.36
Phenoco Disinfecting Fluid,	15.00	9.86
Phenol Liquid (U. S. P. 1890),	1.77	1.76
Phenosote,	3.43	2.31
Phinotas Disinfectant,	1.37	.53
R. R. Rogers Disinfectant,	3.03	2.05
Rudisch's Creolol,	1.24	.75
Saponified Cresol,	1.03	.57
Tarola,	3.12	1.93
Trikesol,	2.62	2.50
Zenoleum,	2.25	1.64
Zodone, No. 4,	1.62	.51
Zonol,	2.37	1.57
<i>Remarks.</i>		
Antozone,	-	Antozone, in undiluted form, did not kill <i>B. typhosus</i> within fifteen minutes. The coefficient is indeterminable.
Creola Disinfectant,	.52	
Dioxygen,	-	The table shows the weak germicidal powers of Dioxygen. The determination of the coefficient is impracticable.
Electrozone,	.90	
Formacone Liquid,	-	A solution of Formacone Liquid of 1 to 10 killed <i>B. typhosus</i> within two and one-half minutes, but a solution of 1 to 20 did not kill it within fifteen minutes. The germicidal powers of Formacone Liquid are therefore so low as to make the accurate determination of the phenol coefficient impracticable.
Killitol,	-	The coefficient of Killitol is so low as to be impracticable of determination. A 50 per cent. solution did not kill <i>B. typhosus</i> within fifteen minutes.
Kretol,	.92	
Listerine,	-	A 20 per cent. solution of Listerine did not kill <i>B. typhosus</i> within fifteen minutes. The determination of the coefficient is impracticable.
Phenol Disinfectant and Cleans- ing Fluid.	.61	

SAMPLE.	PHENOL COEFFICIENT.	
	Without Organic Matter.	With Organic Matter.
Phenol Sodique, . . .	-	A 20 per cent. solution of Phenol Sodique did not kill <i>B. typhosus</i> within fifteen minutes. The determination of the coefficient is impracticable.
Pino-Lyptol, . . .	.27	Platt's Chlorides, in undiluted form, required ten minutes in which to kill <i>B. typhosus</i> . Therefore the coefficient was indeterminable. On being informed that the composition of Platt's Chlorides had been changed so as to raise the coefficient, a second sample was obtained and examined, but in the presence of organic matter the coefficient was so low as to be practically indeterminable. The sample found to contain a trace of mercuric chloride.
Platt's Chlorides, . . .	-	-
Public Health Liquid Disinfectant.	.48	-
Sanitas, . . .	.30	-
The Twentieth Century Disinfectant.	.13	-
Veroform Germicide,	.43	-
Worrell's Insect Exterminator and Disinfectant.	-	A 10 per cent. solution of Worrell's Insect Exterminator and Disinfectant did not kill <i>B. typhosus</i> within fifteen minutes. It is therefore impracticable to determine its phenol coefficient accurately.
Zodane No. 3, . . .	-	A 20 per cent. solution of Zodane No. 3 requires seven and one-half minutes to kill <i>B. typhosus</i> . Its germicidal powers are so low as to make the determination of the coefficient impracticable.

THE CARE OF TUBERCULOUS CATTLE.<sup>1</sup>

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CHARLES E. NORTH, M.D.

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It is astonishing to consider how differently the disease known as bovine tuberculosis is being handled in this country compared with the methods of handling infectious diseases in human beings, particularly those which are known to be readily transmissible. In suppressing small-pox, scarlet fever or diphtheria among human beings one would not dream of making an appropriation of money and offering to pay this to such persons as voluntarily submit themselves to a test for these diseases, leaving all others afflicted with the disease to roam at large unrestrained. If there is any one thing which bacteriologists, health officers and physicians know is positively common to infectious diseases it is that they are transmitted from persons already infected to new persons who have not yet been infected. The bacteria of infectious diseases are carried about on the bodies of men and of animals, and in this way are distributed as the man or animal moves from place to place. In taking measures for the suppression of small pox, diphtheria or scarlet fever, it is fully recognized that this wandering of the infected person must positively be checked or the disease will spread. Therefore a strict quarantine is maintained over the persons known to be sick, and they are prevented from coming in contact with those who are well until the disease has run its course and they cease to be a menace to others. In the case of tuberculosis in human beings, while it is well known that this disease also is transmitted from those who are sick to those who are well, yet, because it is so widespread and because it has not been looked upon as so serious a disease as the others above mentioned, no attempts have been made to maintain a strict quarantine over infected persons. Sanitary precautions can be exercised by the majority of human beings which will prevent the transmission of this disease without quarantine.

In considering tuberculosis among cattle, however, we have to face a different state of affairs. Here it is obvious that the individual has not sufficient intelligence to carry out any sanitary precautions for herself. An infected dairy cow is certain to carry her infection and to transmit the disease to other animals if allowed to mingle with them. While this fact is well known, the action taken by our State authorities entirely ignores its existence. State laws in general have taken only two precautions. The first has been the establishment of quarantine against cattle

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<sup>1</sup> Letter to New York Medical Record, 1912.

imported from other States; the second has been to offer to pay part of the value of such animals as are destroyed after having been proven tuberculous by the application of the tuberculin test. The State laws, however, have made the tuberculin test optional. This has left the dairy cattle in the State at entire liberty to be transferred from farm to farm, from county to county, and from one part of the State to another, with no restrictions whatever. Consequently we find States, some of which have made large appropriations of money amounting to several hundred thousands of dollars, spending the same in paying for the slaughter of dairy cattle, while the number of animals suffering from bovine tuberculosis is constantly recruited by the wanderings of infected cattle from herd to herd and from county to county throughout the State. This is a foolish waste of money. We cannot dodge the issue. Either bovine tuberculosis is a disease which should be suppressed by the proper application of State laws, or it is one which State laws cannot control. If it is to be brought under control it certainly must be treated as other infectious diseases are treated, namely, by quarantine. If those animals which suffer from tuberculosis are not permitted to leave the premises on which they are stationed, then the disease will cease to be transmitted from one place to another. There are few dairy farmers even among those opposed to the application of the tuberculin test who would buy an animal afflicted with tuberculosis if they had knowledge that such was the case. I doubt if there is a buyer in existence who would voluntarily accept an animal to be used for dairy purposes knowing the same to be suffering from tuberculosis. The majority of buyers accept animals on the assumption that they are free from this disease, even though the test has not been applied. It would therefore be no injustice to the buyer of cattle if the law should prohibit the transfer or the sale of an animal which had not been proven free from tuberculosis by the tuberculin test. The owner of tuberculous cattle might object to the enforced quarantine on the ground that he is prevented from selling his tuberculous cows. He is not likely, however, to receive much sympathy either from the buyer or from any one else on this point. If cows are tuberculous they certainly should not be placed upon the market without being labeled as such.

The slaughter of animals found to be tuberculous is an immense economic loss to the State. It seems probable that a large percentage of tuberculous cattle under proper conditions would recover from the disease in the same manner that a large percentage of human beings recover. Any one who has attended the slaughter of large herds cannot help being impressed with the fact that many times a large percentage of healthy looking animals in whom but slight evidences of localized disease are found are killed, and their slaughter seems unnecessary. These animals

if placed amid proper surroundings and treated by the Bang system would undoubtedly show a large percentage of recoveries.

New York State spends several hundred thousand dollars yearly in paying for slaughtered animals, and yet those who have studied bovine tuberculosis believe that it is on the increase at the present time in that State. Either the campaign should be carried on more intelligently or it should be entirely abandoned. As an improvement over present laws I would make the following tentative suggestions:—

1. That each dairy farm be quarantined to the extent that dairy cattle are prohibited from crossing the farm boundary just as they are now prohibited from crossing the State line until they have been proven free from tuberculosis by the tuberculin test.
2. That animals offered at public or private sale cannot be so offered until they have successfully passed the tuberculin test.
3. That in the event of the tuberculin test being applied and reacting animals being found, only those shall be slaughtered which are obviously diseased as shown by physical examination.
4. That animals which are obviously diseased as shown by physical examination by a competent veterinarian shall be slaughtered and paid for as under State appropriations provided by State laws in the past.
5. That reacting animals which show no obvious signs of disease by physical examination shall either be kept separate on the farms where they reside from healthy animals, or that the State set aside certain farms as sanatoriums for the treatment of these cases, with a view to securing the recovery from the disease of a large percentage of the animals.

REVISED REGULATIONS CONCERNING THE PROVIDING  
OF A COMMON TOWEL.

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At a meeting of the State Board of Health held July 11, 1912, it was voted that rules and regulations concerning the providing of a common towel made under the provisions of chapter 59 of the Acts of 1912 be revised so as to read as follows:—

It shall be unlawful to provide a common towel—

- (a) In a lavatory used in connection with any public institution, school-house, hotel, restaurant, theatre or public hall;
- (b) In a lavatory used in connection with any railroad station, railroad car, steam or ferry boat.

The term "common towel" as used in these regulations shall be considered to mean a roller towel or a towel available for use by more than one person without being washed after such use.

New Series.

SEPTEMBER, 1912.

Vol. 7. No. 9.

# MONTHLY BULLETIN



OF THE

## STATE BOARD OF HEALTH

OF

## MASSACHUSETTS.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING SEPT. 7, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Tuberculosis, Pulmonary (or not classified).	Acute Lung Diseases.	Tuberculosis, Other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.	Whooping Cough.
Boston, .	686,092	207	67	65	11	14	—	—	—	1	—	—
Worcester, .	145,986	38	17	38	33	1	1	—	1	—	—	1
Fall River, .	119,295	34	17	18	4	3	1	—	1	—	—	—
Lowell, .	106,294	41	19	11	3	3	2	—	2	—	—	—
Cambridge, .	104,839	33	11	13	2	—	—	—	—	—	—	—
New Bedford, .	96,652	34	20	19	4	—	—	—	—	—	—	—
Lynn, .	89,336	26	11	3	1	—	—	—	—	—	—	—
Springfield, .	88,926	30	9	11	1	—	—	—	—	—	—	—
Lawrence, .	85,892	28	18	13	1	—	—	—	—	—	—	—
Somerville, .	77,236	20	9	5	2	—	—	—	—	—	—	—
Holyoke, .	57,730	14	7	5	2	—	—	—	—	—	—	—
Brockton, .	56,878	8	5	—	—	—	—	—	—	—	—	—
Malden, .	44,404	5	1	2	—	—	—	—	—	—	—	—
Haverhill, .	44,115	17	6	6	6	1	—	—	—	—	—	—
Salem, .	43,697	14	8	6	—	—	—	—	—	—	—	—
Newton, .	39,806	6	3	—	7	—	—	—	—	—	—	—
Fitchburg, .	37,826	17	9	—	5	1	—	—	—	—	—	—
Taunton, .	34,259	18	6	—	—	—	—	—	—	—	—	—
Everett, .	33,484	7	4	—	5	—	—	—	—	—	—	—
Quincy, .	32,642	7	1	—	5	—	—	—	—	—	—	—
Chelsea, .	32,452	5	1	—	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	17	3	—	5	—	—	—	—	—	—	—
Waltham, .	27,834	6	1	—	2	—	—	—	—	—	—	—
Brookline, .	27,792	3	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	5	2	—	—	—	—	—	—	—	—	—
Gloucester, .	24,398	7	2	—	—	—	—	—	—	—	—	—
Medford, .	23,150	7	3	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	9	—	—	—	—	—	—	—	—	—	—
Northampton, .	19,431	5	1	—	—	—	—	—	—	—	—	—
Beverly, .	18,650	3	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	0	—	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	3	1	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	5	1	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	11	4	—	7	—	—	—	—	—	—	—
Peabody, .	15,721	7	2	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	1	—	—	2	—	—	—	—	—	—	—
Woburn, .	15,308	4	2	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	5	1	—	2	—	—	—	—	—	—	—
Gardner, .	14,699	5	2	—	1	—	—	—	—	—	—	—
Marlborough, .	14,579	1	0	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	2	1	—	—	—	—	—	—	—	—	—
Milford, .	13,055	3	0	—	1	—	—	—	—	—	—	—
Adams, .	13,026	2	2	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	2	2	—	1	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	2	0	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	5	3	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	4	1	—	—	—	—	—	—	—	—	—
Webster, .	11,509	2	0	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	1	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	1	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	6	3	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	7	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,593,485	754	291	230	41	38	10	6	5	1	1	5
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WEEK ENDING SEPT. 14, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	203	65	72	15	24	2	1	1	—	1	1
Worcester, .	145,986	51	25	22	7	4	2	—	—	—	—	—
Fall River, .	119,295	39	19	10	5	4	2	—	—	—	—	—
Lowell, .	106,294	44	20	13	1	5	1	—	—	—	—	—
Cambridge, .	104,839	23	8	10	1	4	1	—	—	—	—	—
New Bedford, .	96,652	26	10	10	1	1	1	—	—	—	—	—
Lynn, .	89,336	16	5	2	1	1	1	—	—	—	—	—
Springfield, .	88,926	31	8	9	2	2	1	—	—	—	—	—
Lawrence, .	85,892	34	14	17	4	4	1	—	—	—	—	—
Somerville, .	77,236	18	3	2	1	1	1	—	—	—	—	—
Holyoke, .	57,730	14	7	10	1	1	3	—	—	—	—	—
Brockton, .	56,878	9	—	3	2	—	—	—	—	—	—	—
Malden, .	44,404	10	—	1	—	—	—	—	—	—	—	—
Haverhill, .	44,115	8	—	1	1	—	—	—	—	—	—	—
Salem, .	43,697	11	4	3	—	—	—	—	—	—	—	—
Newton, .	39,806	7	3	6	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	9	6	6	—	—	—	—	—	—	—	—
Taunton, .	34,259	12	6	3	—	—	—	—	—	—	—	—
Everett, .	33,484	9	5	1	—	—	—	—	—	—	—	—
Quincy, .	32,642	3	—	1	—	—	—	—	—	—	—	—
Chelsea, .	32,452	18	4	5	1	—	—	2	—	—	—	—
Pittsfield, .	32,121	9	1	4	—	—	1	—	—	—	1	—
Waltham, .	27,834	7	0	—	—	—	—	—	—	—	2	—
Brookline, .	27,792	2	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	6	4	4	1	—	2	—	—	—	—	—
Gloucester, .	24,398	9	1	2	—	—	1	—	—	—	—	—
Medford, .	23,150	3	—	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	10	5	5	1	—	—	2	—	—	—	—
Northampton, .	19,431	11	1	1	1	1	—	—	—	—	—	—
Beverly, .	18,650	1	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	5	1	1	1	1	—	—	—	—	—	—
Leominster, .	17,580	5	1	—	—	—	—	—	—	—	—	—
Attleborough, .	16,215	0	—	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	3	0	2	2	1	1	—	—	—	—	—
Peabody, .	15,721	2	—	1	—	—	—	—	—	—	—	—
Melrose, .	15,715	2	—	1	1	—	1	—	—	—	—	—
Woburn, .	15,308	7	1	2	1	—	1	—	—	—	—	—
Newburyport, .	14,949	2	1	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	2	0	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	4	1	1	—	—	—	—	—	—	—	—
Clinton, .	13,075	4	2	2	2	1	1	—	—	—	—	—
Milford, .	13,055	2	0	1	1	1	—	—	—	—	—	—
Adams, .	13,026	2	0	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	0	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	1	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	3	2	1	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—	—
Webster, .	11,509	2	2	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	3	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	0	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	3	1	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	4	3	1	1	—	—	—	—	—	—	—
Winthrop, .	10,132	3	—	1	—	1	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,593,485	714	245		228	54	58	7	2	7	-	1	2
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WEEK ENDING SEPT. 21, 1912.

CITIES AND TOWNS.	Population, Cen-sus for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal In-fec-tious Diseases,	Lung Diseases.	Tuber-culo-sis, Pul-mon-a-ry (or not classified).	Tuber-culo-sis, other than Pul-mon-a-ry.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
Boston, .	686,092	215	75	83	24	17	2	1	3	-	-
Worcester, .	145,986	45	17	4	2	1	-	-	-	-	-
Fall River, .	119,295	40	22	26	2	4	-	-	-	-	-
Lowell, .	106,294	38	15	7	2	4	-	-	-	-	-
Cambridge, .	104,839	32	14	15	2	1	1	1	1	-	-
New Bedford, .	96,652	34	20	15	1	2	-	2	-	-	-
Lynn, .	89,336	21	10	3	1	2	-	1	1	-	-
Springfield, .	88,926	24	7	9	1	4	-	-	1	-	-
Lawrence, .	85,892	22	10	6	1	1	-	-	-	-	-
Somerville, .	77,236	18	4	3	-	2	1	-	-	-	-
Holyoke, .	57,730	17	7	7	-	3	-	-	-	-	-
Brockton, .	56,878	9	4	6	1	-	1	1	-	-	-
Malden, .	44,404	13	5	4	1	-	-	1	-	-	-
Haverhill, .	44,115	6	2	1	1	-	-	-	-	-	-
Salem, .	43,697	17	5	5	2	-	-	-	-	-	-
Newton, .	39,806	9	1	1	-	-	-	-	-	-	-
Fitchburg, .	37,826	9	4	1	-	1	-	-	-	-	-
Taunton, .	34,259	23	4	7	3	1	-	-	-	-	-
Everett, .	33,484	5	1	1	-	-	-	-	-	-	-
Quincy, .	32,642	12	5	1	-	-	-	-	-	-	-
Chelsea, .	32,452	10	3	2	1	-	-	-	-	-	-
Pittsfield, .	32,121	9	1	3	-	-	-	1	-	-	-
Waltham, .	27,834	4	1	3	-	-	-	2	-	-	-
Brookline, .	27,792	5	-	-	-	-	-	-	-	-	-
Chicopee, .	25,401	9	6	4	1	-	-	1	1	-	-
Gloucester, .	24,398	8	1	-	-	-	-	-	-	-	-
Medford, .	23,150	6	2	1	1	-	-	-	-	-	-
North Adams, .	22,019	13	0	6	1	-	-	2	-	-	-
Northampton, .	19,431	6	0	2	1	1	-	-	-	-	-
Beverly, .	18,650	8	1	1	1	-	-	-	-	-	-
Revere, .	18,219	2	-	-	-	-	-	-	-	-	-
Leominster, .	17,580	2	-	1	-	-	-	-	-	-	-
Attleborough, .	16,215	2	-	1	1	-	1	-	-	-	-
Westfield, .	16,044	11	4	6	-	-	4	-	-	-	-
Peabody, .	15,721	6	3	-	-	-	-	-	-	-	-
Melrose, .	15,715	2	-	1	-	-	-	-	-	-	-
Woburn, .	15,308	5	2	1	-	-	1	-	-	-	-
Newburyport, .	14,949	3	1	2	1	-	1	-	-	-	-
Gardner, .	14,699	6	3	-	-	-	-	-	-	-	-
Marlborough, .	14,579	1	1	1	-	-	-	-	-	-	-
Clinton, .	13,075	1	-	-	-	-	-	-	-	-	-
Milford, .	13,055	2	0	-	-	-	-	-	-	-	-
Adams, .	13,026	1	0	-	-	-	-	-	-	-	-
Framingham, .	12,948	4	2	1	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	2	0	-	-	-	-	-	-	-	-
Southbridge, .	12,592	4	2	-	-	-	-	-	-	-	-
Plymouth, .	12,141	1	-	-	-	-	-	-	-	-	-
Webster, .	11,509	7	1	2	1	-	-	-	-	-	-
Methuen, .	11,448	6	3	-	1	-	-	-	-	-	-
Wakefield, .	11,404	1	-	-	-	-	-	1	-	-	-
Arlington, .	11,187	3	1	1	-	-	-	-	-	-	-
Greenfield, .	10,427	4	2	-	-	-	-	-	-	-	-
Winthrop, .	10,132	2	-	-	-	-	-	-	-	-	-

## Recapitulation.

Total of report-ing towns, .	2,593,485	965	273	242	53	53	16	6	4	2	1	1
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WEEK ENDING SEPT. 28, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or non-classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.
											Whooping Cough.
Boston, .	686,092	192	65	83	16	24					1
Worcester, .	145,986	50	27	13	4	1					2
Fall River, .	119,295	41	19	16	2	4					
Lowell, .	106,294	32	14	4	2	1					
Cambridge, .	104,839	30	15	20	2	6					
New Bedford, .	96,652	23	12	8	1	2					
Lynn, .	89,336	15	4	3	2	1					
Springfield, .	88,926	37	12	9	1	1					
Lawrence, .	85,892	17	9	8	2	1					
Somerville, .	77,236	8	4	5	1	1					
Holyoke, .	57,730	14	5	3	1	1					
Brockton, .	56,878	13	6	5	1	1					
Malden, .	44,404	10	5	5	1	1					
Haverhill, .	44,115	16	5	8	2	3					
Salem, .	43,697	13	5	3	1	2					
Newton, .	39,806	12	3	3	1	1					
Fitchburg, .	37,826	16	8	8	2	1					
Taunton, .	34,259	11	5	5	1	1					
Everett, .	33,484	7	3	5	1	2					
Quincy, .	32,642	9	3	3	1	1					
Chelsea, .	32,452	17	4	8	2	3					
Pittsfield, .	32,121	5	1	1	1	1					
Waltham, .	27,834	1	-	1	1	1					
Brookline, .	27,792	5	-	1	1	1					
Chicopee, .	25,401	8	6	2	1	1					
Gloucester, .	24,398	4	1	1	1	1					
Medford, .	23,150	5	2	1	1	1					
North Adams, .	22,019	10	3	4	1	1					
Northampton, .	19,431	7	1	4	1	1					
Beverly, .	18,650	3	-	1	1	1					
Revere, .	18,219	2	-	1	1	1					
Leominster, .	17,580	5	1	1	1	1					
Attleborough, .	16,215	2	1	1	1	1					
Westfield, .	16,044	4	1	1	1	1					
Peabody, .	15,721	4	1	2	1	1					
Melrose, .	15,715	2	-	1	1	1					
Woburn, .	15,308	2	0	1	1	1					
Newburyport, .	14,949	3	-	1	1	1					
Gardner, .	14,699	4	3	1	1	1					
Marlborough, .	14,579	5	1	1	1	1					
Clinton, .	13,075	3	1	3	1	1					
Milford, .	13,055	3	0	1	1	1					
Adams, .	13,026	4	1	1	1	1					
Framingham, .	12,948	4	1	1	1	1					
Weymouth, .	12,895	-	-	1	1	1					
Watertown, .	12,875	2	0	2	1	1					
Southbridge, .	12,592	4	1	2	1	1					
Plymouth, .	12,141	1	-	1	1	1					
Webster, .	11,509	3	2	1	1	1					
Methuen, .	11,448	4	1	1	1	1					
Wakefield, .	11,404	4	1	1	1	1					
Arlington, .	11,187	5	2	1	1	1					
Greenfield, .	10,427	2	-	1	1	1					
Winthrop, .	10,132	0	-	1	1	1					

## Recapitulation.

Total of reporting towns, .	2,593,485	703	265	241	46	57	13	10	7	1	1	4
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.**

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DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF SEPT. 7, 14, 21 AND 28, 1912.

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DISEASE.	Place.	WEEK ENDING —			
		Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.
Diarrhoeal diseases, . . .	Boston, . . .	30	26	35	30
	Worcester, . . .	2	1	1	2
	Fall River, . . .	10	10	20	8
	Lowell, . . .	5	1	1	—
	Cambridge, . . .	5	6	7	11
	New Bedford, . . .	13	7	9	4
	Lynn, . . .	1	—	—	—
	Springfield, . . .	8	4	3	6
	Lawrence, . . .	9	11	4	6
	Somerville, . . .	—	1	—	2
	Holyoke, . . .	4	3	4	3
	Brockton, . . .	—	1	3	2
	Malden, . . .	—	—	2	2
	Haverhill, . . .	4	—	1	3
	Salem, . . .	4	3	2	—
	Fitchburg, . . .	7	6	—	3
	Taunton, . . .	3	3	3	3
	Everett, . . .	3	1	1	1
	Quincy, . . .	—	—	1	1
	Chelsea, . . .	—	2	1	2
	Pittsfield, . . .	3	1	1	—
	Waltham, . . .	—	—	—	1
	Chicopee, . . .	—	1	1	—
	Gloucester, . . .	—	1	—	—
	Medford, . . .	—	—	—	1
	North Adams, . . .	—	3	1	1
	Northampton, . . .	1	—	—	2
	Westfield, . . .	4	—	2	—
	Woburn, . . .	1	1	—	—
	Marlborough, . . .	—	—	—	1
	Clinton, . . .	—	—	—	1
	Framingham, . . .	1	—	2	—
	Southbridge, . . .	—	1	—	1
	Webster, . . .	—	—	1	—
Cerebro-spinal meningitis,	Boston, . . .	—	—	1	1
	Cambridge, . . .	—	—	1	—
	Lynn, . . .	1	—	—	—
Meningitis (other than cerebro-spinal).	Malden, . . .	—	—	—	1
Erysipelas, . . . .	Boston, . . .	—	—	—	1
	Worcester, . . .	—	—	—	2
	Fall River, . . .	1	—	—	—

DEATHS FROM INFECTIOUS DISEASES, ETC.—*Concluded.*

DISEASE.	Place.	WEEK ENDING—			
		Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.
Anterior poliomyelitis, .	Greenfield, . . . Springfield, . . . Westfield, . . .	— 1 —	— — —	— — —	1 1
Puerperal fever, . . .	Boston, . . . . Holyoke, . . . . Malden, . . . .	— — —	1 1 1	— — —	1 — —
Tetanus, . . . . .	Clinton, . . . .	—	—	—	1

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF  
SEPT. 7, 14, 21 AND 28, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

		WEEK ENDING—				
		Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.	Total.
Diphtheria, . . . . .		66	81	88	108	343
Measles, . . . . .		39	53	38	52	182
Scarlet fever, . . . . .		42	45	70	56	213
Typhoid fever, . . . . .		76	84	96	74	330
Tuberculosis, pulmonary (or not classified), .		108	158	152	121	539
Tuberculosis, other than pulmonary, . . . . .		5	2	9	7	23
Cerebro-spinal meningitis, . . . . .		2	2	3	5	12
Meningitis, other than cerebro-spinal, . . . . .		2	—	3	—	5
Whooping cough, . . . . .		23	35	38	44	140
Varicella, . . . . .		1	18	9	15	43
Ophthalmia neonatorum, . . . . .		31	28	13	29	101
Anterior poliomyelitis, . . . . .		7	7	1	8	23
Mumps, <sup>1</sup> . . . . .		1	—	—	2	3
Smallpox, . . . . .		1	—	1	1	3
Trachoma, . . . . .		—	2	1	3	6
Erysipelas, <sup>1</sup> . . . . .		—	1	—	—	1
Malaria, <sup>1</sup> . . . . .		2	—	—	3	5
Tetanus, . . . . .		—	—	—	2	2
Anthrax, . . . . .		—	—	—	1	1

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of September, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter, . . .	1	-	1	Jams and jellies,	5	-	5
Cocoa, . . .	-	2	2	Lard, . . .	1	-	1
Coffee, . . .	4	-	4	Meat products:—			
Confectionery, .	4	-	4	H a m b u r g			
Cream, . . .	2	-	2	steak, . . .	3	1	4
Cream of tartar, .	1	-	1	Sausages,	7	4	11
Drugs, . . .	111	10	121	Milk, . . .	312	146	458
Flavoring extracts:—				Olive oil, . . .	2	-	2
Lemon, . . .	3	-	3	Peanut butter, . . .	1	-	1
Peppermint, .	2	-	2	Proprietary foods,	1	-	1
Vanilla, . . .	5	-	5	Spices, . . .	13	-	13
Fruit juice:—				Table sauce, . . .	3	-	3
Lime, . . .	3	-	3	Total, . . .	484	163	647

The samples of drugs found to be adulterated were spirit of nitrous ether, spirit of camphor, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were: Bedford, Billerica, Boston, Brockton, Brookline, Canton, Carlisle, Chelmsford, Concord, Danvers, Dedham, Everett, Fall River, Gloucester, Haverhill, Hingham, Holyoke, Hudson, Hull, Lincoln, Littleton, Lynn, Marblehead, Middleton, Milton, Nantasket, Newburyport, Newton, Norwood, Randolph, Rutland, Salem, Somerville, Springfield, Stow, Ware, Whitman, Woburn, Worcester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Eight convictions were secured during the month of September, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	John Carter, . . . . .	Gloucester, . . .	Milk (total solids 11.06). <sup>1, 2</sup>
2	Charles L. Elliot, Jr., . . .	Danvers, . . .	Milk (total solids 10.10). <sup>1</sup>
3	John E. Higgins, . . . . .	Danvers, . . .	Milk (total solids 10.14). <sup>2, 3</sup>
4	Thomas E. Spittle, . . . . .	South Essex, . . .	Milk (total solids 9.84). <sup>1, 2</sup>
5	Thomas E. Spittle, . . . . .	South Essex, . . .	Milk (total solids 9.74). <sup>1, 2</sup>
6	George E. Waldron, . . . . .	Gloucester, . . .	Milk (total solids 8.42). <sup>1, 2</sup>
7	Antonino Poise, . . . . .	Waltham, . . .	Olive oil (60 per cent. cotton-seed oil)
8	Hugh R. Gray, . . . . .	South Boston, . .	Spirit of peppermint (64 per cent. U. S. P.).

<sup>1</sup> Watered.

<sup>2</sup>Appealed.

<sup>3</sup> Skimmed.

Fines imposed, \$350.

**LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR SEPTEMBER, 1912.**

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
17253	Talmone's Italiau Sweetened Chocolate.	M. Talmone, S. A. Torino, Italy, . . . . .	Contained 91.87 per cent. sucrose.
17511	Dutch Brand Sweetened Cocoa.	A. C. Company, Providence, R. I., . . . . .	Contained 70.58 per cent. sucrose.
3280-O	William D. Wheeler, Boston, Mass., . . . . .	{ 16 per cent. U. S. P. strength. 44 per cent. U. S. P. strength.	
3282-O	Dinsmore Drug Company, Roxbury, Mass., . . . . .	{ 78 per cent. U. S. P. strength. Total solids, 8.42 per cent.; fat, 2.30 per cent.;	
q 9373	James E. Fitzgerald, Salem, Mass., . . . . .	{ contained added water. Total solids, 8.42 per cent.; fat, 2.30 per cent.;	
17783	{ Milk, . . . . .	{ contained added water. Total solids, 9.20 per cent.; fat, 2.60 per cent.;	
17784	{ Milk, . . . . .	{ contained added water. Total solids, 9.20 per cent.; fat, 2.60 per cent.;	
17786	{ Milk, . . . . .	{ contained added water. Total solids, 9.20 per cent.; fat, 2.60 per cent.;	
17790	{ Milk, . . . . .	{ contained added water. Total solids, 11.06 per cent.; fat, 3.50 per cent.;	
17792	{ Milk, . . . . .	{ contained added water. Total solids, 11.12 per cent.; fat, 3.35 per cent.;	
17793	{ Milk, . . . . .	{ contained added water. Total solids, 9.84 per cent.; fat, 2.80 per cent.;	
17794	{ Milk, . . . . .	{ contained added water. Total solids, 10.20 per cent.; fat, 2.80 per cent.;	
q 9313	{ Milk, . . . . .	{ contained added water. Total solids, 9.98 per cent.; fat, 2.75 per cent.;	
q 9319	{ Milk, . . . . .	{ contained added water. Total solids, 10.04 per cent.; fat, 2.10 per cent.;	
q 9320	{ Milk, . . . . .	{ proteins, 3.45 per cent.; skinned milk. Total solids, 10.82 per cent.; fat, 2.10 per cent.;	
17826	Milk, . . . . .	{ proteins, 3.23 per cent.; skinned milk. Total solids, 9.74 per cent.; fat, 2.90 per cent.;	
17827	Milk, . . . . .	{ contained added water.	
q 9327	Milk, . . . . .	{ contained added water.	

## INSPECTION OF DAIRIES.

During the month of September, 1912, 28 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Belmont, . . . .	3	1	33.33	2	66.67
Third inspection, . . . .	6	5	83.33	1	16.67
Brookline, . . . .	2	2	100.00	-	-
Second inspection, . . . .	1	1	100.00	-	-
Cambridge, . . . .	-	-	-	-	-
Second inspection, . . . .	2	2	100.00	-	-
Third inspection, . . . .	5	3	60.00	2	40.00
Provincetown, . . . .	1	1	100.00	-	-
Second inspection, . . . .	1	1	100.00	-	-
Third inspection, . . . .	7	5	71.43	2	28.57

Total number of dairies examined, . . . . .	28
Number found to be free from objectionable conditions, . . . . .	21
Number concerning which letters were sent, . . . . .	7
Total number of conditions to which attention was called, . . . . .	19
Percentage of dairies which passed inspection, . . . . .	75.00

In addition to the above, 15 dairies were visited at which the sale of milk had been discontinued.

The names of the owners of the dairies found to be worthy of commendation follow:—

## BELMONT.

*Class A.*

Henry, John W.†§	White, Edward
<i>Class B.</i>	
Kendall, G. Fred †	Shaughnessy, John †
Ryan, Dennis †§	Welch, Michael †‡

BROOKLINE

*Class A*

**Class XI.**  
**Hyland, E. S.**

*Class B.*

McGrail, Michael J. Miskell, J. & W.\*

CAMBRIDGE.

*Class A.*

Jennings, C. T.† §

*Class B.*

Greene, Mary A.†  
McGuire, Mrs. Margaret \*  
Printon, Estate of Robert T.‡ §  
Reardon, Edmund \* †

\* Second inspection.

† Reported favorably on first inspection.

<sup>†</sup> Third inspection.

§ Reported favorably on all previous inspections.

## PROVINCETOWN.

*Class B.*

Dyer, Amasa * †	Roderick, John ‡
Francis, Joseph ‡	Snow, Tilden F. ‡
Holmes, Joseph ‡	Simmons, Joseph
Steele, Joseph & Sons ‡ §	

**RULES AND REGULATIONS GOVERNING THE BUSINESS OF  
COLD STORAGE, MADE UNDER THE PROVISIONS OF  
CHAPTER 652 OF THE ACTS OF 1912.**

CHAPTER 652 OF THE ACTS OF 1912.

AN ACT TO REGULATE THE COLD STORAGE OF CERTAIN FOOD PRODUCTS.

SECTION 1. The term "cold storage", as used in this act, shall be construed to mean the storage of articles of food at or below a temperature of forty degrees Fahrenheit in cold-storage or refrigerating warehouses.

The term "cold-storage or refrigerating warehouse", as used in this act, shall be construed to mean an establishment employing refrigerating machinery or ice for the purpose of refrigeration, or a place otherwise artificially cooled, in which articles of food are stored for thirty days or more at a temperature of forty degrees Fahrenheit or below.

The term "article of food", as used in this act, shall be interpreted to include fresh meat, fresh meat products, except in process of manufacture, fresh food fish, poultry, eggs and butter.

SECTION 2. No person, firm or corporation shall operate a cold-storage or refrigerating warehouse without a license issued by the state board of health. Any person, firm or corporation desiring such a license may make written application to the board, stating the location of its plant or plants. On receipt of the application the board shall cause an examination to be made of the sanitary condition of any such plant, and if it is found to be in a sanitary condition and otherwise properly equipped for the business of cold storage, the board shall cause a license to be issued authorizing the applicant to operate a cold-storage or refrigerating warehouse for the period of one year. The license shall be issued upon payment by the applicant of a license fee of ten dollars to the treasurer of the commonwealth. In case any warehouse licensed under the provisions of this section or any part thereof, shall be deemed by the state board of health to be conducted in an unsanitary manner, it shall be the duty of the board to close such warehouse, or part thereof, until it shall be put in sanitary condition, and the board shall have power also to suspend the license in case the required changes are not made within a reasonable time. Every such licensee shall furthermore submit a quarterly report to the state board of health on a printed form to be provided by the board. The report shall be filed on or before the twenty-fifth day of January, April, July and October of each

\* Second inspection.

† Reported favorably on first inspection.

‡ Third inspection.

§ Reported favorably on all previous inspections.

year, and it shall state the quantities of articles of food placed in cold storage during the three months preceding the first day of the said months, respectively, and also the quantities of butter and eggs held on the first day of the month in which the report is filed.

SECTION 3. No article of food intended for human consumption shall be placed in cold storage if deemed by the state board of health to be diseased, tainted or otherwise unwholesome.

It shall be the duty of the state board of health to inspect and supervise all cold-storage or refrigerating warehouses in this commonwealth, and to make such inspection of the entry of articles of food therein as the board may deem necessary to secure proper enforcement of this act. The members of the board, or its duly authorized agents, inspectors or employees, shall be permitted access to such establishments and all parts thereof at all reasonable times for purposes of inspection and enforcement of the provisions of this act, or of any other provision of law relating to food products. The board may also appoint and designate such person or persons as it deems qualified to make the inspections herein required.

SECTION 4. All articles of food when deposited in cold storage shall be marked plainly with the date of receipt on the containers in which they are packed, or, if not packed in containers, on or in connection with the articles, except fish.

SECTION 5. No article of food shall be held in cold storage within this commonwealth for a longer period than twelve calendar months, except with the consent of the state board of health as hereinafter provided. The state board of health may, upon application, grant permission to extend the period of storage beyond twelve months for a particular consignment of goods, if the goods in question are found, upon examination, to be in proper condition for further storage at the end of twelve months. The length of time for which further storage is allowed shall be specified in the order granting the permission. A report on each case in which such extension of storage may be permitted, including information relating to the reason for the action of the board, the kind and the amount of goods for which the storage period was extended, and the length of time for which the continuance was granted, shall be included in the annual report of the board.

SECTION 6. It shall be unlawful to sell, or to offer or expose for sale articles of food which have been held in cold storage without notifying persons purchasing, or intending to purchase, the same that they have been so kept by the display of a sign marked, "Cold Storage Goods Sold Here," and it shall be unlawful to represent or advertise as fresh goods articles of food which have been held in cold storage.

SECTION 7. It shall be unlawful to return to cold storage any article of food that has once been released from such storage for the purpose of placing it on the market for sale to consumers, but nothing in this section shall be construed to prevent the transfer of goods from one cold-storage or refrigerating warehouse to another, provided that such transfer is not made for the purpose of evading any provision of this act.

SECTION 8. Broken eggs packed in cans, if not intended for use as food, when deposited in cold storage shall be marked by the owners in accordance with forms prescribed by the state board of health, under the authority hereinafter conferred, in such a way as plainly to indicate the fact that they are not to be sold for food.

SECTION 9. The state board of health may make rules and regulations to secure a proper enforcement of the provisions of this act, including rules and regulations with respect to the use of marks, tags or labels and the display of signs, and may fix penalties for the breach thereof.

SECTION 10. Any person, firm or corporation violating any provision of this act shall upon conviction be punished for the first offence by a fine not exceeding one hundred dollars, and for the second offence by a fine not exceeding five hundred dollars, or, if the offence is committed by a person acting either in his individual capacity or in behalf of a firm or corporation, by imprisonment for not more than thirty days, or by both such fine and imprisonment.

SECTION 11. All acts and parts of acts inconsistent herewith are hereby repealed.

SECTION 12. This act shall take effect on the first day of September, nineteen hundred and twelve. [Approved May 27, 1912.]

#### RULES AND REGULATIONS.

These rules are to be regarded as temporary only, and as occasion requires the State Board of Health will amend, alter and supplement them. Due notice of such alteration will be given to all persons interested.

1. Articles of food intended for cold storage shall, when they are offered for or placed in cold storage, be enclosed in boxes, barrels, crates or other packages sufficiently strong to protect them from injury, unless the articles are of such a character that it is impracticable to pack them in containers.

2. When articles of food contained in packages are placed in cold storage, each package shall be legibly marked in black, purple or red ink as follows: "Received" followed by the day, month and year when such articles were received in storage.

When articles of food not contained in packages are placed in cold storage, and it is found to be impracticable to mark each individual article, they may be stored in stacks or piles, and an appropriate tag applied to them indicating the date on which they were received in cold storage.

All letters or figures must be in plain type not less than three-eighths of an inch in height.

The word "Received" may be written "Rec'd," and figures separated by hyphens may be used to indicate dates and will be regarded as sufficient date if following the word "Rec'd." The last two figures of the number indicating the year when such foods were placed in storage may be used, e. g.: "Received September 1, 1912," may be written: "Rec'd 9-1-12."

3. When articles of food have been kept in cold storage for twelve calendar months, report of such fact shall be made to the State Board of Health by the persons having custody of such articles, and such articles shall not be removed from cold storage by the owners until they have been inspected by the agents of the State Board of Health, and released by order of the Board.

4. For the purpose of facilitating the removal of articles of food from cold storage before the expiration of the statutory period of twelve calendar months, persons operating cold-storage warehouses shall notify the owners of all articles of food stored by them of the date when such articles will have been in storage twelve months, at least fifteen days before such twelve months have elapsed.

5. Requests for permission to store food for a longer period than twelve calendar months must be made by the owners thereof to the State Board of Health, upon blanks which will be furnished by the Board upon application. No such request will be considered by the Board unless a satisfactory reason, stating why such extension of storage is desired, is given.

Before such requests are granted the articles of food to which they refer must be inspected by agents of the Board. Requests should therefore be made at least two weeks before the statutory time limit for storage has expired.

6. Articles of food which are held at low temperatures for temporary protection only, for periods less than thirty days, will not, for the purposes of this act, be regarded as being held in cold storage, and such articles need not be dated, but such articles shall as far as practicable be kept separate from articles intended for cold storage.

7. The sign "Cold Storage Goods Sold Here," required by section 6, (chapter 652, Acts of 1912), shall be printed in type not less than two inches in height, printed in black on a white background, and said sign shall be posted in a conspicuous place in all places where uncooked cold-storage goods are kept or offered for sale, no other lettering to appear on or to be attached to this sign.

8. Broken eggs packed in cans, if not intended for use as food, shall be marked by the owner when deposited in cold storage with a stamp or label reading as follows:—"NOT FOR FOOD"—on the side of the body of each individual can. The words "Not for food" shall be indicated in letters not less than three-eighths of an inch in height, and a similar stamp or label shall be placed upon the side of any crate or other package containing more than a single can.

9. The floors, halls, walls, ceilings, furniture, receptacles, implements and machinery of every cold-storage or refrigerating warehouse shall be kept in a clean, healthful and sanitary condition; and, for the purpose of this rule, unclean, unhealthful or unsanitary conditions shall be deemed to

exist if the food stored is not securely protected from flies, dust, dirt, insects and from all foreign or injurious contamination.

10. Toilet rooms shall be separate and apart from the rooms in which food is stored; cuspidors for the use of employces must be washed daily with disinfectant solution.

11: No employer shall knowingly require, permit or suffer any person to work, nor shall any person work, in a cold-storage or refrigerating warehouse who is affected with any infectious or contagious disease.

12. No material in a state of decomposition or putrefaction, or in any other condition which renders it unfit for use as food, shall be placed in cold storage in the same room or enclosure with articles for use as food.

13. Until further notice, the following classification of foods will be used by persons operating cold-storage warehouses and refrigerating plants in making quarterly reports of articles of food held in cold storage:—

Eggs, case,	Game,
Eggs, broken,	Meat, fresh,
Butter,	Meat, fresh products,
Poultry,	Fish, fresh food.

14. Shell eggs are to be reported in terms of cases and dozens, all other articles to be reported as by package or weight, and in so far as the same is practicable, by both package and weight.

15. Any person, firm or corporation violating any of the provisions of the above rules and regulations governing the use of marks, tags or labels and the display of signs, shall be subject to a fine not exceeding one hundred dollars for each offence.

OFFICE OF STATE BOARD OF HEALTH,  
STATE HOUSE, BOSTON, MASS., Oct. 3, 1912.

## THE OCCURRENCE OF INFANTILE PARALYSIS IN MASSACHUSETTS, 1907-1912.<sup>1</sup>

REPORTED FOR THE MASSACHUSETTS STATE BOARD OF HEALTH BY MARK W. RICHARDSON, M.D., SECRETARY.<sup>2</sup>

It is not the purpose of this communication to present a detailed discussion of the disease known as anterior poliomyelitis, or infantile paralysis. Its scope will be restricted, rather, to a consideration of those facts and observations which have been noted in the experience in Massachusetts for the years 1907-1912, inclusive, and which have seemed rather unusual and therefore possibly worthy of special emphasis.

In the first place, if one looks at the map of Massachusetts and observes the incidence of this disease, he will notice that there seems to be a distinct preference for localities situated along the river beds. In 1907, for instance, the incidence of the disease was especially noticeable in the Berkshire district along the banks of the Hoosac and Housatonic rivers. Furthermore, the valley of the Merrimac seemed also to be especially affected. In 1908 the valley of the Deerfield River was the seat of an especially marked epidemic. It may be, of course, that this apparent predilection for river beds is of no special significance, and may mean only that river beds are more likely to be more densely populated and more likely to have ordinary roads, trolley roads and railroads running through them and are therefore associated with greater possibilities of contact for larger bodies of people. In this connection, however, it must be borne in mind that bodies of water may become the breeding places for a great variety of insects, and the incidence of this disease in the

<sup>1</sup> Investigation in Massachusetts of the disease known as anterior poliomyelitis, or infantile paralysis, was begun in 1907, at the instigation of Dr. Robert W. Lovett, who had been appointed in that year a member of the State Board of Health. The work has been continued ever since along lines which have constantly broadened, and the Board has called to its service in these investigations the assistance of a considerable number of investigators and advisers. In carrying out details of the work the Board has been fortunate in having the advice of such men as Dr. Henry P. Walcott, chairman of the Board, Dr. Robert W. Lovett, member of the Board, Prof. Theobald Smith, Prof. Milton J. Rosenau, Prof. John L. Morse and Dr. J. Homer Wright. In the field work Dr. Philip A. E. Sheppard has been largely concerned. The State Inspectors of Health in their respective districts have investigated many cases, and special epidemics have been the subject of more detailed investigation by Dr. Herbert C. Emerson of Springfield, Dr. Lyman A. Jones of North Adams and Dr. Thomas F. Hennelly of Pittsfield. Special lines of investigation have been pursued, also, by Prof. Theobald Smith, Prof. Milton J. Rosenau, Dr. Robert B. Osgood, Dr. William P. Lucas, Dr. Arthur W. May, Dr. Benjamin Wood, Dr. J. W. Hammond, Jr., and Mr. Charles T. Brues, instructor in economic entomology in Harvard University.

<sup>2</sup> A paper read at the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., Sept. 26, 1912.

neighborhood of bodies of water may be shown by further investigation to be due to a greater prevalence in those districts of such insects.

Another fact brought out by the map of 1907 would seem to be that the distribution of infantile paralysis corresponded in a general way to the density of the population, and in this connection an interesting comparison was made with the incidence of cerebro-spinal meningitis. The two diseases coincided in localization for 1907. In 1908, however, the grouping was largely different, cerebro-spinal meningitis still being more prevalent where the population was dense, whereas infantile paralysis saw its greatest epidemic in a rural community. Furthermore, it was shown that the maximum incidence of infantile paralysis in 1907 took place in September, whereas in cerebro-spinal meningitis the maximum incidence occurred in March. As far as this comparison went, therefore, there seemed to be no parallel between these two diseases as far as epidemiological factors were concerned.

The year 1908 was remarkable for a small but well marked epidemic in the northwestern part of the State, affecting especially the towns on and adjacent to the Deerfield River. In fact, the history of this epidemic shows that per 1,000 of the population the town of Colrain in this epidemic suffered far and away the most serious damage ever noted in the State of Massachusetts. In 1910 there occurred what seemed at the time to be a very marked epidemic in the city of Springfield, in which epidemic at least 150 cases were reported, that is to say, an incidence of 1.6 per 1,000 of the population; and yet in 1908 the town of Colrain, above mentioned, with a population of 1,800 had 24 cases of infantile paralysis, that is to say, 13 cases per 1,000 of the population. It would seem, in a community so severely attacked as this incidence would indicate, that there would be abundant evidence as to the high degree of its contagiousness; and yet careful inquiry during the investigation of 67 cases, in which there was little or no attempt at isolation, shows that there were 166 children in families affected, only 4 of which later acquired the disease. In addition there were 86 children among the neighbors and friends, making a total of 252 children. Indeed, the total number of children that were more or less intimately exposed to the 66 cases was probably twice or three times the number of known exposures.

Another point of interest in this connection, it seems to me, is the following: The Colrain district in 1908 was situated only 30 or 35 miles from the city of Springfield. It was in comparatively intimate relation with said city through the agency of high roads, trolley roads and railroads. There was, therefore, constant interchange of population between these two districts, and yet in 1908 there were in the city of Springfield but 2 cases of infantile paralysis, and the intervening towns along the

Connecticut River showed at most 3 cases in Holyoke, 1 in Chicopee and 1 in Hatfield. In view of this experience it seems to me that whatever one may think of its contagiousness as affecting persons in immediate contact with patients, transfer of the infection by indirect contact through third persons must be very rare, if it ever occurs.

Another interesting point which has been noted by others is that a region once severely infected is not apt to be stricken during the succeeding year, and the Massachusetts maps of 1907 and 1908 show this phenomenon quite plainly. You will see that, for instance, in 1907 the Berkshire district had a considerable number of cases, whereas in 1908 there were very few. Furthermore, you will note that the Colrain district, which was severely affected in 1908, has been practically free from the disease ever since. In 1909 it is apparent that the Berkshire district again became severely affected, and again in 1910 the number of cases dropped off very markedly, even though the valley of the Connecticut River at this time showed a very large number of cases.

The experience in Massachusetts has been that the disease is less readily transmissible than scarlet fever, typhoid fever or diphtheria, but of course in such a comparison the abortive cases of infantile paralysis were not included. Even if such cases were included, however, I have little doubt that infantile paralysis, as compared with the diseases mentioned, is very much less contagious.

Another point which seems to stand out very sharply in the Massachusetts investigations is that the disease is very distinctly one of suburban or rural communities rather than one affecting more especially the cities. This statement rests upon the observations of 2,138 cases which have been analyzed in this regard for the years 1907-1910. The average population for the first 25 cities and towns most affected proved to be 5,205, whereas the average population of the 25 cities and towns least affected was 52,674, that is to say, cities and towns where the disease was relatively least frequent were ten times as large on the average as those where it was most frequent. As a control to this table cases of scarlet fever reported in the State for the year 1910 showed that in the 25 cities and towns in which scarlet fever was most prevalent the average population was 6,446, whereas in the 25 where it was least prevalent the average population was 7,633. In other words, there would seem to be some conditions radically different in the spread of infantile paralysis as compared with scarlet fever. This fact, taken in connection with the experience detailed above in the relation to cerebro-spinal meningitis, which disease, together with scarlet fever, is well known to be spread by contact with the nasopharyngeal secretions, must be given very weighty consideration when we come to estimate the rôle of these same secretions in the spread of

infantile paralysis; for the conditions favoring the transfer of these secretions, that is to say, the density of population, school attendance, overcrowding in wintertime and unhygienic surroundings—in other words, conditions found most prominently in city life—are not those which favor, apparently, the spread of infantile paralysis. Infantile paralysis, therefore, being in Massachusetts, at least, a country disease, one would look for some determining cause in country conditions as the reason for this apparent predilection for the rural districts, and as a result of investigation it is found that country children are exposed very much more strongly to any possible influence which animal disease might have upon them than city children. For instance, in the 25 cities and towns where the disease was least prevalent, that is to say, in the larger cities and towns, there was 1 cow to every 84 inhabitants and 1 horse to every 32 inhabitants; in the 25 cities and towns where the disease was most prevalent there was 1 cow to 11 inhabitants and 1 horse to 14 inhabitants. This table became very much more striking when a comparison was made of the numbers of swine, fowls and dogs. Now it is known that all these animals are subject at times to paralysis of varying types, and in a considerable number of instances paralysis in animals has been associated with paralysis in human beings. A considerable number, however, of paralyzed animals have been examined, and emulsions of their spinal cords have been injected into monkeys by Prof. Theobald Smith, but as yet with no positive results. In this connection, furthermore, it is apparent that country children are much more subject to the bites of insects than city children, and the possibility that insects may act as intermediate hosts for the virus of infantile paralysis, and may convey this virus from infected animals or infected human beings to other animals or human beings, must always be strongly borne in mind. In 1911 an investigation along this line of 88 cases in 17 cities and towns showed that in all instances the ordinary stable fly, *Stomoxys calcitrans*, was present in or about the house of the infected individual. Experiments looking to the possible infection of monkeys through the bites of this fly will be reported upon later by Professor Rosenau.

Meteorological records show that since 1904 Massachusetts has been subject to a constant deficiency rainfall. Such a deficiency would naturally be associated with a considerable increase in the amount of dust. When it is considered, however, that the disease has affected greatly other portions of the country in which there has been no such deficiency in rainfall the importance of this failure in the rain supply cannot be considered to be great.

An investigation as to the occurrence of this disease in institutions for children showed that such children were much less liable to the disease

than those leading an ordinary manner of life. They would seem to enjoy as a result of their somewhat complete isolation a freedom from infection.

Osgood and Lucas found an active virus in the nasopharyngeal membrane of the monkey five and a half months after an acute attack, and in the tonsils of a human being six months after an attack. These observations have naturally a very important bearing upon the question of contagion. In the first place, it suggests very strongly that the disease is transmitted by the secretions of the nasopharyngeal membranes, and, furthermore, that danger of contagion may persist for many months, and possibly longer; this in spite of the fact that Rosenau, Sheppard and Amoss failed to demonstrate the virus in the mouth and nose of 18 patients in various stages of the disease. It is, of course, well known that positive results have apparently been secured recently by Kling, Weinstedt and Pettersen. In other words, we have to do here, as in other infectious diseases, with the question of chronic carriers of disease and their relation to its propagation. Its importance becomes especially marked when we consider the number of cases which have been in contact with chronic cases of infantile paralysis previous to infection.

This persistence of the virus in the body of the infected individual may be important from another point of view, for there are a number of cases on record in the experience in Massachusetts in which the patient has apparently suffered from a second attack of the disease a few weeks, months or even years after the first attack. If such a second infection or reinfection may occur, it must be considered as possible that the patient between attacks may be a chronic carrier of the disease and therefore possibly responsible for secondary cases in others. Certain it is that very closely circumscribed localities may suffer from the disease over a considerable period of years. For instance, in one of the larger cities in Massachusetts, within a very small circumscribed area, 2 cases occurred in 1903, 2 cases in 1908, 1 case in 1909 and 1 case in 1910. The suggestion that a chronic carrier of infection was responsible for this situation is very strong. As is seen from the map for 1910 the city of Springfield, which up to that time had suffered a considerable and unexplained immunity from this disease, suffered from a quite severe epidemic. Furthermore, investigation as to the mortality from this and other acute diseases in said city showed very interesting results in that the mortality from cholera infantum, whooping cough and scarlet fever was also very much increased during this year. In fact, the mortality rate for cholera infantum, which for 1907, 1908 and 1909 had averaged 27, in 1910 jumped up to 106. The suggestion is, of course, that a number of these cases of death reported as cholera infantum may have been and probably were typical cases of infantile paralysis of the gastro-intestinal type.

As far as therapeutics are concerned little new has been learned through the Massachusetts investigations. Osgood and Lucas, to be sure, made some experiments upon monkeys, with a certain number of specific sera and vaccines, to see whether the specific immunity brought about by these sera and vaccines might not give a partial immunity to infantile paralysis. The results, however, were negative. Hexamethylenamin has been recommended to the profession of Massachusetts strongly as a possible prophylactic against the disease, and quite generally employed.

A unique experiment with this drug was carried out at a certain boys' school in our State, an experiment which may be worthy of repetition by others under similar circumstances. At the opening of this school in the fall a boy arrived who had been in Europe and was in intimate contact with at least 25 of his fellow pupils for a period extending over ten days or two weeks. He then developed infantile paralysis, much to the discomfort of the school authorities. The boy was isolated immediately, and all the other pupils given hexamethylenamin in their drinking water. Whatever may have been the effect of this medication no other cases developed in this school. On the other hand, we have had one or two other similar experiences where cases in prodromal stages have been in intimate contact with school children and where no secondary cases have occurred, even though hexamethylenamin was not administered,—facts which make us very conservative in estimating the effect of simple contact in the spread of the disease.

As regards prognosis, the experience in Massachusetts has shown this to be much better than was previously supposed. In fact, the following conclusions seem justified: "In anterior poliomyelitis complete recovery or function recovery occurs in over 25 per cent. of cases examined at the end of four years. Atrophy may exist without impairment of function. In about one-half of the recovered cases the onset was mild. The distribution of the paralysis in such recovered cases was not essentially different from that in cases which do not recover. Recovery in many instances required months and in several cases from one to three years."

Another interesting possibility is that herpes zoster may be a form of anterior poliomyelitis, due to an unusual localization of the virus. Coincidence of this disease with epidemics of infantile paralysis has been noted, especially in recent years, by English observers. In the experience in Massachusetts certain striking cases have occurred. For instance, in 1912 there has occurred, coincidentally, in the same individual, anterior poliomyelitis and herpes zoster. Furthermore, we have a history, also, of anterior poliomyelitis in the child at the same time with herpes zoster in the father. Pathologists maintain that the changes occurring in the posterior ganglia of the spinal cord in herpes zoster resemble almost exactly those found in poliomyelitis in the anterior horns of the cord, and

the hypothesis that the two diseases are due to the same virus with different localizations is certainly one worthy of further investigation.

Finally, the experience of Massachusetts has not been such as to support the theory that infantile paralysis is spread from person to person by direct or indirect contact. The rural preponderance of the disease, the comparative immunity of children confined in institutions and hospitals, the summer incidence, the failure of the disease to find its greatest incidence in cities and localities where density of population and over crowding are most marked, and the irregular distribution have all militated against the acceptance of such a theory. In fact, the feeling among Massachusetts observers has been strong for some time that the epidemiology of this disease was best explained through the intermediate action of some biting insect, and evidence in support of this theory will be presented by Prof. Milton J. Rosenau of Harvard University. (See below.)

#### SOME EXPERIMENTAL OBSERVATIONS UPON MONKEYS CONCERNING THE TRANSMISSION OF POLIOMYELITIS THROUGH THE AGENCY OF STOMOXYS CALCITRANS.<sup>1</sup>

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A PRELIMINARY NOTE BY M. J. ROSENAU, PROFESSOR, PREVENTIVE MEDICINE AND HYGIENE,  
HARVARD MEDICAL SCHOOL, BOSTON, MASS., AND CHARLES T. BRUES, INSTRUCTOR IN  
ECONOMIC ENTOMOLOGY, BUSSEY INSTITUTION OF HARVARD UNIVERSITY.

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The work we are about to report was done for, and under, the auspices of the State Board of Health of Massachusetts.

We should like to have it distinctly understood, and therefore emphasize the fact right in the beginning, that this announcement is to be considered as a preliminary report, for the work is still in progress. Certain results have been obtained which it seems advisable to announce at this juncture. In taking this action in announcing work before it is completed we have not assumed the sole responsibility, but have taken counsel with older and wiser heads, friends for whose judgment we have the highest regard.

When we first took up the study of this disease — infantile paralysis — with the State Board of Health of Massachusetts, we considered all possible modes of transference of the virus from the sick to the well, but gradually focused our attention upon the fact that the disease seemed to be spread rather directly from person to person. In other words, the

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<sup>1</sup> Remarks made by Professor Rosenau in the discussion of the previous paper.

disease appeared to us at first blush to be a "contagious" disease, but one in which mild or abortive cases, missed cases, and third persons probably played an important rôle in the transfer of the infection. We were probably prejudiced in favor of this viewpoint on account of the splendid work of Wickman, whose publications we studied with care. We were further influenced to regard poliomyelitis as a "contagious" disease owing to the views of Flexner, who compared it to epidemic cerebro-spinal meningitis, and who regarded that it spread in the light of a contact infection through the secretions from the mouth and nose. The analogy to meningitis was a very close one, and the experimental fact that the virus could be demonstrated in the nasal mucosa of monkeys (Osgood, Lucas and others) seems to corroborate the suspicion that we are in fact dealing with an infection spread very much as cerebro-spinal meningitis is spread.

If these assumptions were correct then the virus should be demonstrable in the secretions from the nose and throat. Rosenau, Sheppard and Amoss therefore injected 18 monkeys with the nasal and buccal secretions obtained from 18 persons who were suffering with the disease at the time, or in the stage of convalescence, or from persons suspected of acting as carriers. These results were negative. At the same time Straus of New York had a series of negative results, and other American workers were also unable to find the virus where we assumed it should be. These negative results seemed to us to have positive significance, and was the first definite indication that we were upon the wrong trail.

That poliomyelitis is not a "contagious" disease was clearly brought out by Dr. Richardson and other observers who have spoken this morning, all of whom have emphasized the point that the disease shows little or no tendency to spread in crowded districts, in schools, in institutions, in asylums, in camps and in other places where one would expect a disease spread by contact through secretions of the mouth and nose to spread most readily. We have in mind the fact that many cases of the disease have been brought into asylums and hospitals throughout the State of Massachusetts, in all stages of the infection; yet secondary cases have not occurred under such circumstances. On the contrary the disease prevailed in Massachusetts more particularly in rural and country districts sparsely settled.

Another reason that led us away from the theory of contacts, and made us believe that we were not dealing with a contagious disease in the ordinary sense of that term, was the close analogy between rabies and poliomyelitis. All investigators in laboratories who have worked with these two viruses have been struck with the similarity between

rabies and poliomyelitis. Both viruses are diffused widely throughout the body, both exist in special concentration in the central nervous system, both are filterable, etc. Rabies being a wound infection made us conjecture that poliomyelitis may also be similarly transmitted.

Our experience with yellow fever, perhaps more than anything else, influenced us concerning the probable mode of transmission of poliomyelitis. It had been the privilege of one of us to work with yellow fever both before and after the mosquito days, and many analogies came to mind which made us believe that poliomyelitis also was not a contagious disease.

All the various reasons that influenced us in turning from contagion to some other mode of transference need not engage our attention now, for the history of this part of the work has been ably and accurately given by Dr. Richardson in the paper which he has just read. In justice to Dr. Richardson we desire to state that all the essential conclusions of his paper were arrived at before he knew of the results in the laboratory with the monkeys.

The work which we now briefly desire to report consists in exposing monkeys during all stages of the disease to the bites of *Stomoxyx calcitrans*. The monkeys were infected in the usual way by bringing an emulsion of a known virus obtained from human sources in direct association with the central nervous system. After the flies had had abundant opportunity to bite these infected monkeys during the various stages of the disease, including the period of incubation, healthy monkeys were then exposed to the bites of these same flies. Of 12 healthy monkeys indications of the disease have been obtained in 6, 3 of them in a virulent form, resulting in death, the other 3 with transient tremblings, partial paralysis, diarrhoea and recovery. It is interesting to note that several of the monkeys had diarrhoea, therein the disease resembles the human disease more closely than when monkeys are simply inoculated with the virus into the brain, for gastro-intestinal upsets in children are frequently associated with infantile paralysis.

In these experiments it is important, we think, to use the proper technic in order to obtain successful results. The flies should be handled as little as possible. It is much better to handle the monkeys and leave the flies alone. In our experiment the flies were caught in nature, some of them were bred, placed in a large cage about 6 feet long by 5 or 6 feet wide, and some 3 or 4 feet high. The monkeys are stretched out at full length and wrapped in chicken wire. In this way they can be placed in the cage and the flies have full opportunity to bite. The flies appear to need a feed of blood about every day or two. They sometimes visit water which is kept in the cage, but apparently cannot be induced to eat any other food than

the blood. At least, in our experiments, bananas, fruits and other substances exposed apparently were little visited by the flies. Furthermore, in our experiments a very large number of flies were used.

In conclusion we desire simply to summarize the fact that we have apparently transferred the virus of poliomyelitis from monkey to monkey through the bite of the stable fly, *Stomoxys calcitrans*. We would like to emphasize the fact that this does not appear to be simply a mechanical transference, but rather a biological one, requiring a period of extrinsic incubation in the intermediate host.

What conclusions can we draw from these facts? At present it seems to us we would not be justified in drawing any conclusion — the significance of the facts if confirmed is self-evident.

#### **FOR THE INFORMATION OF CONSUMPTIVES PLANNING TO SETTLE IN THE SOUTHWEST.**

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The following letter has been received by His Excellency Governor Foss from Gov. O. B. Colquitt of Texas, and is published here for the information of all who may be interested:—

GOVERNOR'S OFFICE, AUSTIN, TEX.

*To the Governor of Massachusetts.*

DEAR SIR:—With the approach of winter, the number of sufferers from tuberculosis and other diseases coming to Texas seeking the benefit of our climate is greatly increasing.

The records of one southwestern city show that there were 8 natives of your State who died there of tuberculosis during a period of five and one-half years, and that 5 bodies of consumptives were shipped back to your State for burial. The records of other cities in the southwest will show similar facts, proportionate to population.

I call your attention to the resolution adopted by the Southwestern Conference on Tuberculosis, in session at Waco, Tex., on April 16, 1912, which read as follows:—

A resolution advocating publicity as to the lack of free hospitals for stranger consumptives in the southwest; the inability of charity organizations to aid such; the difficulty of securing suitable employment; that consumptives coming to the southwest should have funds sufficient to carry them for about one year.

Whereas, Southwestern States have climatic and other natural advantages which have attracted people from other States for years past, especially the sick, and as many of these people come into the southwest with insufficient funds to maintain themselves until well, as a result of which they become public charges or suffer great privation, which counteracts all possible benefit of climate, and

*Whereas*, The number of such indigent persons, who are careless in their habits of living and spread their disease, is not decreasing, it seems proper for us to issue a warning to the public and especially to that portion of it afflicted with tuberculosis and to all physicians, churches, lodges, labor unions and charitable organizations; therefore be it

*Resolved*, That the newspapers of the country be asked to give publicity to the following facts: —

(a) There are no free hospitals in the southwest for other than citizens of southwestern States.

(b) No assistance can be given strangers by charitable associations because the public does not contribute funds for that purpose.

(c) Owing to the large immigration of healthy people there is small chance for employment for sick persons. The number of factories is limited, cheap labor is performed by Mexicans and negroes, ranch and farm work is strenuous and invalids are not employed by land owners.

(d) That invalids cannot hope to secure assistance from private individuals because the demands for aid from strangers has exhausted the patience of the people.

(e) That invalids coming to the southwest should have funds sufficient to carry them for one year, as they cannot hope for restoration to health and strength under that period of time.

(f) That each community should provide proper hospitals, dispensaries, visiting nurses, etc., and care for their own people.

And be it further

*Resolved*, That the railroad corporations of the United States are hereby requested not to sell half-rate or charity tickets to the southwest, unless responsible parties guarantee that the prospective passenger will not become a public charge after reaching his or her destination, and be it further

*Resolved*, That the Committee of Ninety-nine of the Conference is hereby requested to give full publicity to these and other facts tending to discourage the further immigration of indigent consumptives to the southwest, and to use a part of such funds as they may collect for this purpose.

I ask that you give publicity to this matter in the papers of your State, in the hope that it will deter advanced and indigent consumptives from leaving their homes and friends to come southwest. My only object in addressing you is to save these afflicted sufferers the hardships of the journey and the resultant disappointment.

Sincerely yours,

O. B. COLQUITT,  
*Governor.*

New Series.

OCTOBER, 1912.

Vol. 7. No. 10.

# MONTHLY BULLETIN



OF THE

## STATE BOARD OF HEALTH

OF

## MASSACHUSETTS.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING Oct. 5, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.
Boston, .	686,092	216	62	80	25	19	1	2	2	1	1
Worcester, .	145,986	53	22	11	4	2	2	1	1	1	1
Fall River, .	119,295	45	21	20	1	3	1	1	1	—	—
Lowell, .	106,294	35	10	5	2	1	1	—	—	—	—
Cambridge, .	104,839	33	11	11	2	1	1	—	—	—	—
New Bedford, .	96,652	33	16	14	2	3	1	1	1	—	—
Lynn, .	89,336	21	3	5	3	1	1	—	—	—	—
Springfield, .	88,926	30	14	8	4	1	1	—	—	—	—
Lawrence, .	85,892	14	8	9	4	1	1	—	—	—	—
Somerville, .	77,236	13	3	1	1	1	1	—	—	—	—
Holyoke, .	57,730	20	11	8	1	1	1	—	—	—	—
Brockton, .	56,878	16	5	4	1	2	2	—	—	—	—
Malden, .	44,404	14	5	7	1	3	1	—	—	—	—
Haverhill, .	44,115	5	1	5	3	1	1	—	—	—	—
Salem, .	43,697	11	6	5	—	1	—	—	—	—	—
Newton, .	39,806	8	2	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	12	7	7	—	—	—	—	—	—	—
Taunton, .	34,259	8	2	4	—	2	—	—	—	—	—
Everett, .	33,484	7	4	2	—	—	—	—	—	—	—
Quincy, .	32,642	5	3	1	1	—	—	—	—	—	—
Chelsea, .	32,452	12	7	3	2	—	—	—	—	—	—
Pittsfield, .	32,121	5	—	1	—	1	—	—	—	—	—
Waltham, .	27,834	10	4	1	1	1	—	—	—	—	—
Brookline, .	27,792	2	1	1	—	—	—	—	—	—	—
Chicopee, .	25,401	8	5	2	—	—	—	—	—	—	—
Gloucester, .	24,398	4	1	—	4	—	2	—	—	—	—
Medford, .	23,150	11	3	1	2	—	—	—	—	—	—
North Adams, .	22,019	3	1	1	1	—	—	—	—	—	—
Northampton, .	19,431	10	0	2	—	1	—	—	—	—	—
Beverly, .	18,650	6	2	—	—	—	—	—	—	—	—
Revere, .	18,219	7	4	2	—	—	—	—	—	—	—
Leominster, .	17,580	4	1	—	—	1	—	—	—	—	—
Attleborough, .	16,215	4	0	—	—	—	—	—	—	—	—
Westfield, .	16,044	4	2	2	—	—	—	—	—	—	—
Peabody, .	15,721	3	1	—	—	—	—	—	—	—	—
Melrose, .	15,715	3	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	2	—	—	—	—	—	—	—	—	—
Newburyport, .	14,949	1	—	—	—	—	—	—	—	—	—
Gardner, .	14,699	4	3	3	—	—	—	—	—	—	—
Marlborough, .	14,579	2	0	—	—	—	—	—	—	—	—
Clinton, .	13,075	3	1	1	1	—	—	—	—	—	—
Milford, .	13,055	4	0	2	—	—	2	—	—	—	—
Adams, .	13,026	3	1	1	—	—	1	—	—	—	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	3	1	2	1	—	1	—	—	—	—
Southbridge, .	12,592	3	1	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	—	—	—	—	—	—	—	—
Webster, .	11,509	1	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	1	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	1	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	4	1	—	1	1	—	—	—	—	—
Greenfield, .	10,427	1	—	—	1	—	1	—	—	—	—
Winthrop, .	10,132	—	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,583,353	731	257	236	59	53	7	4	5	2	3	4
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WEEK ENDING OCT. 12, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	DEATHS FROM —																												
		Reported Deaths in Each.			Deaths under Five Years.			Principal Infectious Diseases.			Acute Lung Diseases.			Tuberculosis, Pulmonary (or non-classified).			Tuberculosis, other than Pulmonary.			Diphtheria.			Typhoid Fever.			Scarlet Fever.				
		Deaths	in	Each	Deaths	under	Five	Principal	Infectious	Diseases.	Acute	Lung	Diseases.	Tuberculosis,	Pulmonary	(or	non	classified).	Tuberculosis,	other	than	Pulmonary.	Diphtheria.	Typhoid	Fever.	Scarlet	Fever.	Measles.	Whooping	Cough.
Boston, .	686,092	216			66			81		28			24					1					1						1	
Worcester, .	145,986	38			11			10		33			3					1					1							
Fall River, .	119,295	38			24			22		6			1					1					1							
Lowell, .	106,294	31			14			6		4			1					1					1							
Cambridge, .	104,839	26			4			15		4			1					1					1							
New Bedford, .	96,652	22			14			9		2			1					1					1							
Lynn, .	89,336	22			7			7		2			1					1					1							
Springfield, .	88,926	18			7			7		2			1					1					1							
Lawrence, .	85,892	27			12			9		1			1					1					1							
Somerville, .	77,236	14			3			4		2			1					1					1							
Holyoke, .	57,730	17			6			6		2			1					1					1							
Brockton, .	56,878	19			5			6		2			1					1					1							
Malden, .	44,404	16			5			2		1			1					1					1							
Haverhill, .	44,115	22			4			7		1			1					3					1							
Salem, .	43,697	14			6			4		1			1					1					1							
Newton, .	39,806	9			5			1		1			1					1					1							
Fitchburg, .	37,826	10			4			1		1			1					1					1							
Taunton, .	34,259	8			0			4		2			1					1					1							
Everett, .	33,484	5			3			3		1			1					1					1							
Quincy, .	32,642	10			2			1		1			1					1					1							
Chelsea, .	32,452	11			3			4		3			1					1					1							
Pittsfield, .	32,121	11			2			2		1			1					1					1							
Waltham, .	27,834	10			2			4		2			1					2					1							
Brookline, .	27,792	4			1			—		—			—					—					—							
Chicopee, .	25,401	7			4			2		1			1					1					—							
Gloucester, .	24,398	2			—			—		—			—					—					—							
Medford, .	23,150	7			2			3		1			1					1					—							
North Adams, .	22,019	4			3			1		1			1					1					—							
Northampton, .	19,431	7			0			1		1			1					1					—							
Beverly, .	18,650	6			—			—		—			—					—					—							
Revere, .	18,219	2			0			—		—			—					—					—							
Leominster, .	17,580	4			1			4		2			1					1					—							
Attleborough, .	16,215	3			1			—		—			—					—					—							
Westfield, .	16,044	2			1			—		—			—					—					—							
Peabody, .	15,721	4			1			1		1			1					—					—							
Melrose, .	15,715	6			—			1		1			1					—					—							
Woburn, .	15,308	—			2			1		1			1					—					—							
Newburyport, .	14,949	2			0			1		1			1					—					—							
Gardner, .	14,699	2			0			—		—			—					—					—							
Marlborough, .	14,579	3			0			—		—			—					—					—							
Clinton, .	13,075	4			—			—		—			—					—					—							
Milford, .	13,055	—			0			—		—			—					—					—							
Adams, .	13,026	1			0			—		—			—					—					—							
Framingham, .	12,948	1			—			—		—			—					—					—							
Weymouth, .	12,895	—			—			—		—			—					—					—							
Watertown, .	12,875	3			2			1		1			1					—					—							1
Southbridge, .	12,592	3			2			1		1			1					—					—							
Plymouth, .	12,141	4			1			—		2			1					—					—							
Webster, .	11,509	1			1			—		—			—					—					—							
Methuen, .	11,448	2			1			—		—			—					—					—							
Wakefield, .	11,404	1			—			—		—			—					—					—							
Arlington, .	11,187	5			1			—		—			—					—					—							
Greenfield, .	10,427	2			—			—		—			—					—					—							
Winthrop, .	10,132	—			—			—		—			—					—					—							

## Recapitulation.

Total of reporting towns, .	2,554,990	706	233	229	75	50	6	12	3	2	3	3
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WEEK ENDING OCT. 19, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary, (or n.o.t. classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mesles.
Boston, .	686,092	202	56	73	31	15	4	2	3	-	2
Worcester, .	145,986	28	8	3	3	1	1	1	2	3	3
Fall River, .	119,295	31	14	16	6	1	1	1	1	-	-
Lowell, .	106,294	38	11	6	4	1	1	1	1	-	-
Cambridge, .	104,839	30	10	14	9	3	2	1	1	-	-
New Bedford, .	96,652	39	19	18	3	3	2	1	1	-	-
Lynn, .	89,336	14	1	1	4	1	1	1	1	-	-
Springfield, .	88,926	20	7	9	3	2	2	1	1	-	-
Lawrence, .	85,892	19	7	6	3	1	1	1	1	-	-
Somerville, .	77,236	19	4	3	2	1	1	1	1	-	-
Holyoke, .	57,730	19	12	9	3	2	1	1	1	-	-
Brockton, .	56,878	5	1	2	3	2	1	1	1	-	-
Malden, .	44,404	10	3	3	3	1	1	1	1	-	-
Haverhill, .	44,115	18	4	5	3	3	1	1	1	-	-
Salem, .	43,697	18	6	6	4	3	1	1	1	-	-
Newton, .	39,806	6	2	4	3	1	1	1	1	-	-
Fitchburg, .	37,826	11	4	1	1	1	1	1	1	-	-
Taunton, .	34,259	16	5	6	2	2	1	1	1	-	-
Everett, .	33,484	4	0	2	2	1	1	1	1	-	-
Quincy, .	32,642	13	5	2	1	1	1	1	1	-	-
Chelsea, .	32,452	12	3	1	1	1	1	1	1	-	-
Pittsfield, .	32,121	7	2	1	1	1	1	1	1	-	-
Waltham, .	27,834	10	3	2	1	1	1	1	1	-	-
Brookline, .	27,792	4	-	1	1	1	1	1	1	-	-
Chicopee, .	25,401	5	3	2	1	1	1	1	1	-	-
Gloucester, .	24,398	7	1	1	1	1	1	1	1	-	-
Medford, .	23,150	4	-	1	1	1	1	1	1	-	-
North Adams, .	22,019	11	6	5	4	4	4	4	4	-	-
Northampton, .	19,431	7	0	1	1	1	1	1	1	-	-
Beverly, .	18,650	4	4	2	1	1	1	1	1	-	-
Revere, .	18,219	5	4	1	1	1	1	1	1	-	-
Leominster, .	17,580	4	-	1	1	1	1	1	1	-	-
Attleborough, .	16,215	9	2	1	1	1	1	1	1	-	-
Westfield, .	16,044	6	1	1	3	1	1	1	1	-	-
Peabody, .	15,721	2	1	1	1	1	1	1	1	-	-
Melrose, .	15,715	4	-	1	1	1	1	1	1	-	-
Woburn, .	15,308	6	3	3	2	2	1	1	1	-	-
Newburyport, .	14,949	2	-	1	1	1	1	1	1	-	-
Gardner, .	14,699	1	1	1	1	1	1	1	1	-	-
Marlborough, .	14,579	4	1	1	1	1	1	1	1	-	-
Clinton, .	13,075	2	1	1	1	1	1	1	1	-	-
Milford, .	13,055	5	0	1	1	1	1	1	1	-	-
Adams, .	13,026	4	1	1	2	1	1	1	1	-	-
Framingham, .	12,948	4	1	1	1	1	1	1	1	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	2	1	1	1	1	1	1	1	-	-
Southbridge, .	12,592	1	-	1	1	1	1	1	1	-	-
Plymouth, .	12,141	4	1	1	1	1	1	1	1	-	-
Webster, .	11,509	2	1	1	1	1	1	1	1	-	-
Methuen, .	11,448	2	1	1	1	1	1	1	1	-	-
Wakefield, .	11,404	0	-	1	1	1	1	1	1	-	-
Arlington, .	11,187	2	-	1	1	1	1	1	1	-	-
Greenfield, .	10,427	6	1	2	3	2	1	1	1	-	-
Winthrop, .	10,132	6	2	2	1	1	1	1	1	-	-

## Recapitulation.

Total of reporting towns, .	2,593,485	714	221	219	93	37	9	7	10	2	1	3
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WEEK ENDING OCT. 26, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	DEATHS FROM —											
		Reported Deaths in Each.	Deaths under Five Years.		Principal Infectious Diseases.	Acute Lung Diseases	Tuberculosis, Pulmonary (or n.o.t. classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
			Deaths	Years.									
Boston, .	686,092	230	58		80	32	22		1	3	-	-	-
Worcester, .	145,986	36	10		5	3	1		1	1	-	-	-
Fall River, .	119,295	50	17		21	7	3		1	-	2	1	-
Lowell, .	106,294	26	8		11	5	3		1	-	-	1	-
Cambridge, .	104,839	16			8	3	3		1	-	-	-	-
New Bedford, .	96,652	19	8		8	2	1		1	-	-	-	-
Lynn, .	89,336	16	6		3	3	-		1	-	-	-	-
Springfield, .	88,926	24	4		5	1	1		1	-	2	-	-
Lawrence, .	85,892	18	10		15	8	1		1	-	-	-	-
Somerville, .	77,236	22	5		6	3	1		1	-	-	-	-
Holyoke, .	57,730	15	4		6	2	2		1	-	-	-	-
Brockton, .	56,878	9	4		1	-	-		1	-	-	-	-
Malden, .	44,404	6			2	2	-		1	-	-	-	-
Haverhill, .	44,115	9	2		3	-	1		1	-	-	-	-
Salem, .	43,697	16	-		3	-	1		1	-	-	-	-
Newton, .	39,806	11	2		3	1	1		1	-	12	-	-
Fitchburg, .	37,826	5			1	1	-		1	-	-	-	-
Taunton, .	34,259	17	5		5	3	1		1	-	-	-	-
Everett, .	33,484	4	1		1	-	-		1	-	-	-	-
Quincy, .	32,642	7	2		-	-	-		1	-	-	-	-
Chelsea, .	32,452	16	3		4	1	-		1	-	-	-	-
Pittsfield, .	32,121	12	5		3	1	-		1	-	-	-	-
Waltham, .	27,834	7	2		1	-	-		1	-	-	-	-
Brookline, .	27,792	6			2	-	-		1	-	1	-	1
Chicopee, .	25,401	9	4		1	-	-		1	-	-	-	-
Gloucester, .	24,398	1	-		2	-	-		1	-	-	-	-
Medford, .	23,150	8	4		2	-	-		1	-	-	-	-
North Adams, .	22,019	5	1		1	-	-		1	-	-	-	-
Northampton, .	19,431	13	0		2	-	-		2	-	-	-	-
Beverly, .	18,650	1	-		-	-	-		-	-	-	-	-
Revere, .	18,219	3	-		1	1	-		-	-	-	-	-
Leominster, .	17,580	3	-		1	1	-		-	-	-	-	-
Attleborough, .	16,215	4	3		1	1	-		-	-	-	-	-
Westfield, .	16,044	2	0		1	-	-		1	-	-	-	-
Peabody, .	15,721	3	1		1	1	-		-	-	-	-	-
Melrose, .	15,715	4	-		-	-	-		-	-	-	-	-
Woburn, .	15,308	8	1		-	-	-		-	-	-	-	-
Newburyport, .	14,949	2	1		1	1	-		-	-	-	-	-
Gardner, .	14,699	3	1		-	-	-		-	-	-	-	-
Marlborough, .	14,579	2	1		1	1	-		-	-	-	-	-
Clinton, .	13,075	3	2		-	-	-		-	-	-	-	-
Milford, .	13,055	4	1		-	-	-		-	-	-	-	-
Adams, .	13,026	4	2		2	-	-		-	-	1	-	-
Framingham, .	12,948	2	2		-	-	-		-	-	-	-	-
Weymouth, .	12,895	-	-		-	-	-		-	-	-	-	-
Watertown, .	12,875	1	1		-	-	-		-	-	-	-	-
Southbridge, .	12,592	2	1		1	-	-		-	-	-	-	-
Plymouth, .	12,141	2	1		-	-	-		-	-	-	-	-
Webster, .	11,509	1	1		-	-	-		-	-	-	-	-
Methuen, .	11,448	2	1		-	-	-		-	-	-	-	-
Wakefield, .	11,404	4	-		1	-	-		-	-	-	-	-
Arlington, .	11,187	2	1		1	-	-		1	-	-	-	-
Greenfield, .	10,427	4	1		1	-	-		-	-	-	-	-
Winthrop, .	10,132	5	1		1	-	-		1	-	-	-	-

*Recapitulation.*

Total of reporting towns, .	2,593,485	704	194	213	84	48	S	3	11	2	-	1
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS  
DISEASES.**

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DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN  
ABOVE TABLES DURING THE WEEKS OF OCT. 5, 12, 19 AND 26, 1912.

DISEASE.	Place.	WEEK ENDING —			
		Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.
Diarrhoeal diseases, . . .	Boston, . . .	24	23	15	17
	Worcester, . . .	2	1	—	—
	Fall River, . . .	13	14	4	9
	Cambridge, . . .	6	2	4	2
	New Bedford, . . .	9	5	9	5
	Springfield, . . .	5	3	3	1
	Lawrence, . . .	4	5	—	4
	Somerville, . . .	—	1	—	1
	Holyoke, . . .	5	3	5	1
	Brockton, . . .	1	1	—	1
	Malden, . . .	3	—	2	—
	Haverhill, . . .	1	2	1	—
	Salem, . . .	4	3	—	—
	Newton, . . .	—	—	1	—
	Fitchburg, . . .	7	1	—	—
	Taunton, . . .	2	2	3	1
	Everett, . . .	1	—	—	—
	Quincy, . . .	—	—	1	—
	Chelsea, . . .	1	—	—	—
	Pittsfield, . . .	—	—	—	1
	Chicopee, . . .	1	1	—	—
	Medford, . . .	—	—	—	1
	North Adams, . . .	1	1	1	1
	Revere, . . .	1	—	1	—
	Leominster, . . .	1	1	—	—
	Attleborough, . . .	—	—	1	—
	Westfield, . . .	1	—	1	—
	Adams, . . .	—	—	1	1
	Plymouth, . . .	—	—	1	—
	Southbridge, . . .	—	—	—	1
	Greenfield, . . .	—	—	—	1
Cerebro-spinal meningitis,	Boston, . . .	—	1	—	—
	Worcester, . . .	1	—	—	—
	Lowell, . . .	1	—	—	—
	Lawrence, . . .	—	—	—	1
	Somerville, . . .	—	—	—	1
	Haverhill, . . .	—	1	—	—
	Pittsfield, . . .	—	—	—	1
	Waltham, . . .	—	—	1	—
Meningitis (other than cerebro-spinal).	Everett, . . .	—	1	—	1
	Framingham, . . .	—	—	1	—
	Wakefield, . . .	—	—	—	1
Erysipelas, . . . .	Boston, . . . .	1	—	—	1
	Cambridge, . . . .	1	—	—	—

DEATHS FROM INFECTIOUS DISEASES, ETC.—*Concluded.*

DISEASE.	Place.	WEEK ENDING—			
		Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.
Influenza, . . . .	Boston, . . . .	-	1	-	1
Anterior poliomyelitis, .	Taunton, . : : Northampton, : : :	- 1	-	1 -	-
Puerperal fever, . . .	Boston, . : : Springfield, . : : Brockton, . : :	1 - -	- 1 1	- - -	1 - -

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

## CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF OCTOBER 5, 12, 19, 26, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—				
	Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.	Total.
Diphtheria, . . . . .	127	110	132	135	504
Measles, . . . . .	75	150	142	127	494
Scarlet fever, . . . . .	68	96	105	119	388
Typhoid fever, . . . . .	103	78	60	66	307
Tuberculosis, pulmonary (or not classified), . . . . .	144	136	150	132	562
Tuberculosis, other than pulmonary, . . . . .	6	2	11	5	24
Cerebro-spinal meningitis, . . . . .	3	1	5	3	12
Meningitis, other than cerebro-spinal, . . . . .	-	-	-	3	3
Whooping cough, . . . . .	28	23	42	9	102
Varicella, . . . . .	18	25	47	60	150
Ophthalmia neonatorum, . . . . .	39	41	29	27	136
Anterior poliomyelitis, . . . . .	8	3	6	3	20
Mumps, <sup>1</sup> . . . . .	4	2	6	11	23
Smallpox, . . . . .	6	-	1	18	25
Trachoma, . . . . .	-	-	-	1	1
Erysipelas, <sup>1</sup> . . . . .	1	-	-	-	1
Malaria, . . . . .	2	-	2	1	5
Tetanus, . . . . .	-	-	-	1	1

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of October, 1912.

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder, .	3	1	4	Maple syrup, .	1	-	1
Bread, . . .	1	-	1	Meat products:—			
Butter, . . .	2	-	2	Canned meats, .	3	-	3
Canned fruits and vegetables, .	1	-	1	H a m b u r g steak, .	1	1	2
Cider, . . .	1	-	1	Mince meat, .	1	-	1
Condensed milk, .	3	1	4	Sausages, .	5	7	12
Confectionery, .	4	-	4	Milk, . . .	397	127	524
Cream, . . .	7	-	7	Molasses, . . .	1	-	1
Cream of tartar, .	2	-	2	N o n a l c o h o l i c drinks, . . .	9	1	10
Drugs, . . .	182	20	202	Olive oil, . . .	3	-	3
Eggs (broken out), .	3	16	19	Pickles, . . .	2	-	2
Flavoring extracts:—				Shrimp, . . .	1	-	1
Vanilla, . .	2	-	2	Spices, . . .	5	-	5
Fruit juice:—				Sugar, . . .	1	-	1
Grape, . . .	1	-	1	Syrup, . . .	3	-	3
Honey, . . .	1	1	2	Table sauce, . . .	1	-	1
Infant foods, .	6	-	6	Tea, . . .	1	-	1
Jams and jellies, .	8	-	8	Total, . . .	664	175	839
Malt liquors, . .	2	-	2				

The samples of drugs found to be adulterated were mercurial ointment, proprietary drugs, quinine pills, sodium phosphate, spirit of nitrous ether, spirit of camphor, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were: Abington, Adams, Ashby, Becket, Boston, Brockton, Brookline, Burlington, Cambridge, Canton, Dedham, Dover, East Weymouth, Everett, Gardner, Gloucester, Greenfield, Fall River, Fitchburg, Great Barrington, Lawrence, Lee, Lowell, Lynn, Malden, Marlborough, Maynard, Milford, Montague, New Bedford, North Adams, North Sudbury, Otis, Pittsfield, Salem, Springfield, Taunton, Waltham, Watertown, Williamstown, Winchendon, Winchester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Fifteen convictions were secured during the month of October, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Standard Egg Company,	Boston, . . .	Broken mixed eggs. <sup>1</sup>
2	Frank Fingold, . . .	Malden, . . .	Milk (total solids 11.48). <sup>2</sup>
3	Chester G. Godfrey, . . .	Williamstown, . . .	Milk (total solids 10.50). <sup>2</sup>
4	Alex Reinhardt, . . .	Becket, . . .	Milk (total solids 11.58). <sup>3</sup>
5	Anton W. Swanson, . . .	Billerica, . . .	Milk (total solids 11.36). <sup>2</sup>
6	Guy F. Davis, . . .	Gloucester, . . .	Sausage (contained cereal). <sup>1</sup>
7	Hector D. McDonald, . . .	Gloucester, . . .	Sausage (contained cereal). <sup>1</sup>
8	United Fisheries Company, . . .	Gloucester, . . .	Sausage (decomposed).
9	John M. Cassidy, . . .	Lee, . . .	Spirit of camphor.
10	Austin C. Dinsmore, . . .	Boston, . . .	Spirit of peppermint (44 per cent. U. S. P.).
11	William D. Wheeler, . . .	Boston, . . .	Spirit of peppermint (16 per cent. U. S. P.).
12	John M. Cassidy, . . .	Lee, . . .	Sweet spirit of nitre.
13	John Cormick, . . .	Lee, . . .	Sweet spirit of nitre.
14	Frank R. Pease, . . .	Lee, . . .	Sweet spirit of nitre.
15	Joseph C. Oxley, . . .	Reading, . . .	Tincture of iodine (dissolved in denatured alcohol).

<sup>1</sup>Appealed.

<sup>2</sup>Watered.

<sup>3</sup>Skimmed.

Fines imposed, \$475.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR OCTOBER, 1912.

Number of sample,	Character of Sample,	Name of Manufacturer, Wholesaler or Producer.	Results of Analysis.
17759	Armour's "Tomato Bouillon,"	Armour & Co., Chicago, Ill.,	Contained salicylic acid.
18123	Crystal Mint,	Crystal Mint Carbonating Company, Boston, Mass.,	Contained benzole acid.
1181-S	Spirit of nitrous ether,	J. J. Harvey, Great Barrington, Mass.,	47 per cent. U. S. P. strength.
1175-S	Spirit of nitrous ether,	John M. Cassidy, Los Angeles, Calif.,	69 per cent. U. S. P. strength.
1237-S	Spirit of camphor,	H. E. Horner, Los Angeles, Calif.,	70.8 per cent. U. S. P. strength.
1177-S	Spirit of camphor,	John M. Cassidy, Los Angeles, Calif.,	40 per cent. U. S. P. strength.
17984	Milk,	H. Heroux, Fall River, Mass.,	Total solids, 11.16 per cent.; fat, 3.40 per cent.; contained added water.
17986	Milk,	A. Benjalpahand, Fall River, Mass.,	Total solids, 11.26 per cent.; fat, 3.35 per cent.; contained added water.
18024	Milk,	Chester G. Godfrey, Williamstown, Mass.,	Total solids, 11.18 per cent.; fat, 3.70 per cent.; contained added water.
18025	Milk,	Jesse D. Ammar, Fall River, Mass.,	Total solids, 10.50 per cent.; fat, 3.50 per cent.; contained added water.
19037	Milk,	Fred W. Taylor, Maynard, Mass.,	Total solids, 10.67 per cent.; fat, 2.85 per cent.; contained added water.
q19745	Milk,	Fred W. Taylor, Maynard, Mass.,	Total solids, 11.08 per cent.; fat, 3.35 per cent.; contained added water.
18112	Milk,	Frank Flugold, Malden, Mass.,	Total solids, 11.95 per cent.; fat, 4.10 per cent.; contained added water.
18114	Milk,		Total solids, 11.63 per cent.; fat, 4.00 per cent.; contained added water.
18115	Milk,		Total solids, 12.00 per cent.; fat, 2.85 per cent.; protein, 3.16 per cent.; skimmed milk.
q19744	Milk,	Fred W. Taylor, Maynard, Mass.,	Total solids, 11.60 per cent.; fat, 2.80 per cent.; protein, 3.25 per cent.; skimmed milk.
q19784	Milk,	W. P. Adams, Fitchburg, Mass.,	Contained formaldehyde.
q19702	Milk,	Thomas W. Barnes, North Dartmouth, Mass.,	Total solids, 9.52 per cent.; fat, 0.20 per cent.; skimmed milk; can not marked.
q19823	Milk,	Bert M. Fife, Leominster, Mass.,	Total solids, 9.40 per cent.; fat, 0.50 per cent.; skimmed milk; can not marked.
q19822	Milk,		

## INSPECTION OF DAIRIES.

During the month of October, 1912, 193 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Auburn, . . . . .	9	6	66.67	3	33.33
Second inspection, . . . . .	22	18	81.82	4	18.18
Dudley, . . . . .	14	8	57.14	6	42.86
Second inspection, . . . . .	26	22	84.62	4	15.38
Lexington, . . . . .	—	—	—	—	—
Second inspection, . . . . .	1	1	100.00	—	—
Methuen, . . . . .	18	15	83.33	3	16.67
Third inspection, . . . . .	59	42	71.19	17	28.81
Fourth inspection, . . . . .	1	1	100.00	—	—
Waltham, . . . . .	8	7	87.50	1	12.50
Second inspection, . . . . .	11	9	81.82	2	18.18
Third inspection, . . . . .	24	20	83.33	4	16.67
Total number of dairies examined, . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	193
Number found to be free from objectionable conditions, . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	149
Number concerning which letters were sent, . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	44
Total number of conditions to which attention was called, . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	116
Percentage of dairies which passed inspection, . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	77.20

In addition to the above, 61 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 49 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow:—

## AUBURN.

## Class A.

Grovsnor, D. C.\*  
Knowles, F. P.\*†

McInness, John C.\*  
McQuade, James T.\*†

## Class B.

Burgess, William R.*†	Lind, John *	Sibley, H. E.
Cheney, Fred A.*†	Murphy, E. D.*	Thayer, A. C.*
Eaton, Joseph P.*†	Perry, S. P.*	Tuttle, C. L.
Gilbert, A. Eugene	Pond, A. M.*	Warren, F. E.*
Granger, H. N.*	Pond, O. P.*†	Whittaker, J. H.*†
Jacobs, H. P.*	Sanborn, B. A.	Willis, J. H.
Keep, E. P. & Son	Sibley, Arthur *	

\* Second inspection.

† Reported favorably on first inspection.

## DUDLEY.

*Class A.*

Bateman, W. E.\* †  
 Bates, Everett A.\* †  
 Bisco, A.\* †

Gadska, August  
 Henry, Thomas  
 Kupke, Adolph\* †

Williams, G. B.\* †  
 Wilman, S. M.\* †

*Class B.*

Alton, Herbert G.\* †  
 Babcock, F. E.\* †  
 Bair, R. J. M.\*  
 Ballard, L.\* †  
 Bandallow, Fred\* †  
 Bateman, Frank\* †  
 Bosworth, A. N.  
 Brown, C. H.

Conant, Samuel M.\* †  
 Deary, C. H.  
 Deon, F. E.\*  
 Dodge, F. G. D.  
 Downey, J. H.\* †  
 Fish, George H.\*  
 Gilles, J. J.\*

Gochoski, Frank  
 Hall, George F.\* †  
 Harwood, William H.\* †  
 Jacobs, C. A.\* †  
 Kubin, Frank  
 Marsh, Henry L.\*  
 Mason, S. F.\* †

## LEXINGTON.

*Class B.*

Belcher, Harry\* †

## METHUEN.

*Class AA.*

Cox, Lewis S.

*Class A.*

Bragdon, E. L.‡ §  
 Connelly, Dennis F.‡ §  
 Cox, Patrick ‡  
 Dooley, P. J.‡  
 Dowding, Mrs. Mary ‡ †  
 Giles, F. H.‡ §

Harnisch Bros.‡  
 Harris, H. A.  
 Hill, M. S.‡  
 Hoh, John W.‡  
 Kitchen, C. H.  
 Miller, Fred W.|| §

Russell, F. A.‡  
 Stevens, Charles  
 Taylor, E. D.‡  
 Webster, George K.‡ §  
 Williams, William ‡ §  
 Young, S. Wesley ‡

*Class B.*

Adams, George ‡  
 Austin, J. B.‡  
 Ball, Charles  
 Basil, Gideon  
 Barker, Mrs. Stephen J.‡  
 Batty Bros.‡  
 Bedard, Joseph ‡  
 Bishop, Victor ‡  
 Bragg, Lester ‡  
 Breen, Mrs. John  
 Cross, George L.‡ §  
 Currier, Fred L.‡  
 Dietzell, F. G.

Dowding, Samuel  
 Flanders, G. E.  
 Gardner, Fred L.‡  
 Griffin, Henry ‡  
 Griffin, J. E.  
 Griffin, Rufus A.  
 Hinzinga, William and Isaac  
 Lipfold, Carl S.‡  
 McNamara, John J.‡  
 Merrill, Joseph E.‡  
 Minzner, Fred J.  
 Nelson, D. D.  
 Nice, Benjamin ‡ §

Nimmo, Henry ‡  
 Noyes, Minna ‡  
 Perley, Frank C.‡  
 Richardson, Charles E. ‡  
 Richardson, J. B.‡ §  
 Richardson, V. B.‡  
 Servoian, M.  
 Simonian, G.‡  
 Taylor, George ‡  
 "Town Farm" ‡ §  
 Whittier, H. A.†  
 Young, Clarence E.‡

\* Second inspection.

† Third inspection.

‡ Reported favorably on first inspection.    § Reported favorably on all previous inspections.

|| Fourth inspection.

## WALTHAM.

## Class AA.

Runkle, John C.‡ §

Warren, Miss Cornelia \* †

## Class A.

Baldwin, James W.\* †

Griggs, Thomas ‡

Hubbard, C. U.‡ §

## Class B.

Anderson, John

Keenan, John ‡

Smith, Charles F.‡ §

Baker, Dr. William H.\* †

Lawrence, Phineas \* †

Smith, E. P.

Caldwell, H. G.

Lynch Bros.\*

Smith, F. C.

Clark, Eliza ‡

Mahar, Frank \*

Smith, Nathan ‡ §

Connolly, Thomas ‡

McAadoo, Robert

Stearns, Est. of Amos †

Cooke, John A.‡

Needham, Clarence B.‡ †

Stearns Bros.\*

Cunningham, Thomas ‡ §

Ross, C. G.

Stewart, Frank J.‡

Hardy, Henry F.

Sanderson, Horace \* †

Viles, Charles L.‡ §

Hardy, Est. of J. K.‡ †

Sleeper, George W.‡

Wellington, Edward †

Jones, Arthur W.\*

Slouenwhite, Jos. A.‡

Willard, George H.‡

Jones, Dexter ‡

**TRANSMISSION OF POLIOMYELITIS BY MEANS OF THE  
STABLE FLY (*Stomoxys calcitrans*).<sup>1</sup>**

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By JOHN F. ANDERSON, DIRECTOR HYGIENIC LABORATORY, AND WADE H. FROST, PASSED ASSISTANT SURGEON, UNITED STATES PUBLIC HEALTH SERVICE.

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As a result of the thorough epidemiologic studies of poliomyelitis conducted by the Massachusetts State Board of Health from 1907 to 1912, under the direction of Dr. Mark W. Richardson, secretary of the board, evidence was collected which led the investigators to strongly suspect that the common stable fly (*Stomoxys calcitrans*) played an important part in the spread of this disease.

At the joint session of sections I. and V. of the Fifteenth International Congress on Hygiene and Demography in Washington, Sept. 26, 1912, Dr. Milton J. Rosenau, of the Harvard Medical School, who has been working in conjunction with the Massachusetts State Board of Health, announced the result of an experiment which seemed to confirm most strikingly the inferences drawn from the epidemiologic work above mentioned.

Dr. Rosenau stated that he had infected several monkeys with poliomyelitis by intracerebral inoculation, exposed them daily — from the

\* Second inspection.

† Third inspection.

‡ Reported favorably on first inspection.      § Reported favorably on all previous inspections.

<sup>1</sup> Reprinted from Public Health Reports, Washington, D. C., Oct. 25, 1912.

time of inoculation till death — to the bites of several hundred *Stomoxys*, at the same time exposing 12 fresh monkeys to the bites of the same flies. At the time the announcement was made 6 of these 12 monkeys were reported as having developed symptoms characteristic of poliomyelitis, i.e., illness followed by more or less extensive paralysis. Of these 6 monkeys 2 had died, 3 were paralyzed at that time, and 1 recovered after a brief illness. In the cord of one of the monkeys that had died were found the characteristic lesions of poliomyelitis, that is, perivascular infiltration and destruction of the motor cells of the anterior cornu. The cord of the other monkey was reported to have shown changes less characteristic of poliomyelitis, namely, degenerations of the motor cells without perivascular infiltration.

At the time of announcement a sufficient interval had not elapsed to determine the result of the attempt to transmit the infection to other monkeys by inoculation with the cord of one of the two that had died.

This experiment, giving an altogether new direction to the experimental study of poliomyelitis, appeared of sufficient importance to warrant an immediate attempt at confirmation.

In the experiment below reported it has been our object to repeat, as nearly as possible, the conditions of that reported by Dr. Rosenau, and we are indebted to him for assistance and advice in the details of the experiment.

On October 3, rhesus No. 242 was inoculated intracerebrally with an emulsion of the cord of a monkey which had died of poliomyelitis. The virus used is a strain originally obtained from the Rockefeller Institute for Medical Research, kept at the hygienic laboratory for nearly two years, during which time it has been passed through a large series of monkeys.

Two hours after inoculation the infected monkey was exposed to the bites of about 300 *Stomoxys* recently collected in Washington. Thereafter until death, on October 8, this animal was exposed daily for about two hours to the bites of the same flies, plus additional fresh *Stomoxys* added from time to time as caught. This monkey (No. 242) developed characteristic complete paralysis on the afternoon of October 7 and died at 2 A.M. October 8.

Another monkey (rhesus No. 246), similarly inoculated on October 5, was then exposed daily to the bites of the same flies, beginning October 7. This monkey developed paralysis on the morning of October 9, soon becoming completely paralyzed and dying that afternoon.

Thus, from October 4 to October 9, inclusive, the flies used had access to two monkeys inoculated with poliomyelitis, first, rhesus No. 242, then rhesus No. 246. It may be noted that the incubation period

in both these monkeys was very short — four days from inoculation to the development of paralysis.

Beginning October 4, two fresh monkeys (rhesus No. 243 and Java No. 241) were exposed daily for about two hours to the bites of these same flies; and beginning October 5 a third fresh monkey (rhesus No. 244) was similarly exposed. All three of these animals subsequently developed symptoms of poliomyelitis, as follows:—

Java No. 241 was found completely paralyzed on the morning of October 12 and died a few hours later. At autopsy tubercles were found in the lungs, liver and spleen.

Rhesus No. 244 showed paralysis of the hind legs on the same day (October 12), but was, nevertheless, exposed again to the bites of the *Stomoxys* from 10 A.M. till 2 P.M. At 3 P.M. the animal, being almost completely paralyzed, was chloroformed. At autopsy tubercles were found in the lungs, liver and spleen, but apparently not sufficient to have been the cause of death.

Rhesus No. 243, which had appeared well on the morning of October 13, was found at 4 o'clock that afternoon to have a partial paralysis of the right hind leg. The following morning the hind legs and right fore leg were almost completely paralyzed. By 3.30 P.M. the neck also was paralyzed and the intercostal muscles somewhat affected. The animal was then chloroformed. At autopsy the internal organs appeared normal, except the spinal cord, which was edematous, the gray matter being congested. Sections of the cord, histologically examined, showed typical well-marked lesions of poliomyelitis; perivascular round-cell infiltration; foci of dense infiltration in the gray matter of the anterior horn; and destruction of some of the motor neurons.

The histologic examination of the cords of monkeys Nos. 241 and 244 has not yet been completed, but it is believed, on the clinical evidence, that they died of poliomyelitis.

To summarize: three monkeys exposed daily to the bites of several hundred *Stomoxys*, which at the same time were allowed daily to bite two intracerebrally inoculated monkeys, developed quite typical symptoms of poliomyelitis eight, seven and nine days, respectively, from the date of their first exposure.

In order to confirm the diagnosis of poliomyelitis in rhesus No. 243, 1 cubic centimeter of an emulsion of the cord of this monkey was injected intracerebrally on October 14 into a healthy monkey (rhesus No. 250). This animal recovered promptly from the operation and remained apparently quite well till the morning of October 17, when a partial paralysis of the right fore leg was noted, progressing somewhat during the day. On the morning of October 18 both fore legs were completely

paralyzed and the hind legs weak. In the afternoon of the same day the right hind leg was completely paralyzed, the left very weak, and the neck paralyzed. The monkey died at 10.30 P.M. and was immediately placed on ice until autopsy could be made at 9 A.M., October 19.

At the autopsy there was found some congestion of the lower lobe of both lungs, most marked on the left side, upon which the animal had been lying after paralysis developed. The meninges of the cord were markedly congested. On section, the cord appeared edematous, and the gray matter congested, showing minute hemorrhages. The site of inoculation appeared normal except for a slight clot. Cultures from this site have shown no growth. The other organs were normal in appearance.

Histologic examination of the cord showed lesions characteristic of poliomyelitis, intense congestion and perivascular infiltration, foci of round-cell infiltration here and there in the gray matter, destruction of the cells of the anterior cornu, and small hemorrhages in the anterior and posterior cornu.

#### CONCLUSION.

These results, in confirmation of those announced by Dr. Rosenau, would seem to demonstrate conclusively that poliomyelitis may be transmitted to monkeys through the agency of the stable fly (*Stomoxys calcitrans*).

It remains for further work to decide whether this is the usual or the only method of transmission in nature.

#### **ANTITYPHOID INOCULATION: THREE YEARS' EXPERIENCE WITH ITS USE IN TRAINING SCHOOLS FOR NURSES IN MASSACHUSETTS.<sup>1</sup>**

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BY LESLEY H. SPOONER, M.D., BOSTON.

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Pfeiffer's experiment which led Wright to introduce antityphoid inoculation into the British army was more far-reaching than one could have imagined at that time. All are familiar with the extensive work which has been accomplished on these lines in the English, German and United States armies.

Inoculation material has been most varied. Heat-killed vaccines have been the most popular, and, in fact, the only preparations used to any considerable extent in man. But animal experiments and a few

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<sup>1</sup> Read before the Fifteenth International Congress of Hygiene and Demography, Washington, D. C., September, 1912.

human inoculations have been attempted with other material. Vincent (1) recommends macerated organisms sterilized by ether. Müller (2) has treated cultures with lecithin and extracted the product with chloroform. Rusznyák (3) has used the typhoid immune serum, while Besredka (4) and Bessau (5) have employed mixtures of the serum and dead organisms. Chemical agents, such as silver salts, glycerine, sodium carbonate, formaline and carbolic acid, have been widely used to sterilize cultures. Macfadyen (6) has employed frozen, powdered and filtered organisms. But the most extreme method is that of Castellani (7), who employs on his third and fourth injection living organisms which have been attenuated by an exposure to 50° C. The advantages and disadvantages of these methods, although worthy of prolonged discussion, cannot be considered at the present moment.

All practical work has been accomplished in artificial typhoid immunity by means of heat-killed vaccines. Pfeiffer and Kolle (8) and Wright (9) recommend heating to 60° C., but Leishman (10) and Russell (11) advise only 53° C. In my work I was guided by the careful researches of Major Leishman and others of the British commission (10, 12, 13), whose work alone at that time seemed complete.

It is well recognized that the typhoid bacillus is the greatest foe to the soldier in the field. During the last century nearly all the armies of the civilized world have been devastated by this infection, but the dangers of typhoid communication were not fully realized until the discovery of the specific organism by Eberth, in 1880, and its demonstration in the various excreta of the body which followed very shortly.

It was shown by Joslin and Overlander (14) that the nurses of Massachusetts were eight times more liable to typhoid infection than others less intimately associated with the sick. For the ten years ending 1908, 2 to 4 nurses contracted typhoid fever each year in the Massachusetts General Hospital alone. According to my statistics (15) there was a morbidity of 1.4 per cent. among the nurses, as compared with Joslin's of 1.41 per cent. among the nurses of most of the large hospitals of Massachusetts. This unnecessary prevalence of typhoid fever in the best regulated of our hospitals caused Dr. Mark W. Richardson, secretary of the State Board of Health, who had long been interested in the disease and its prevention, to bring the matter before the governing boards of the Massachusetts General Hospital. Their response was prompt and decisive, so that inoculation was started there at once and has been continued regularly to the present time.

In order to produce immunity in such a class of individuals it was necessary to demonstrate the safety of the process and the relative ease with which it could be accomplished. To bring about this result I pro-

posed the use of small doses, frequently repeated, of a low virulence vaccine. My vaccine material was and still is essentially the same as that used by Leishman and Russell.

#### TECHNIQUE.

In my work the technique is briefly as follows: the stock culture was isolated from the spleen of a case of typhoid fever in 1902, so that its attenuation has been considerable. Its killing power with animals is four times less than that of a similar culture only one year old. The organisms, grown on agar slants for twenty-four hours, are killed by an exposure to 53° C. in the water bath for an hour. Standardization is made with the Zeiss blood platelet counter. Injections are four in number, and are given at five-day intervals. The doses, which vary somewhat with the size of the individual, are 100,000,000, 200,000,000, 400,000,000 to 600,000,000. For small women and children the amount of the vaccine is proportional to the body weight.

The site of injection is preferably in the left interscapular region, but many inoculations have been performed at the insertion of the left deltoid. The latter seems less convenient because of the considerable muscular activity in the neighborhood of the swelling which occurs in almost all instances. Alcohol is used as a local antiseptic. When large numbers are to be inoculated at one time several syringes are used which are boiled between injections, care being taken to cool the syringe before vaccine material is introduced.

#### REACTION.

It is a well-recognized fact that debilitated people present the most profound reactions, and I have observed that latent and chronic disease of a non-typhoidal character may be made active by an inoculation. I have avoided vaccination in such individuals, especially tubercular patients, but I have suffered a few accidents through improper histories. In this way a temporary, but not serious, acute exacerbation has taken place in three chronic arthritides, a chronic cholecystitis, a subacute urethritis and quiescent cases of furunculosis and acne. The duration of these untoward effects was very short, however.

The safety of my work necessarily calls forth a discussion of the "negative phase" so strongly supported by Wright, Morgenroth and Vincent. Since many of the nurses are exposed to the disease during inoculation, a period of diminished resistance would be of great danger. Pfeiffer, Leishman and Russell have shown that the period following injection is one of increased resistance, however. This is in perfect accord with the small morbidity of typhoid among these nurses and 80 others who were most intimately exposed to the disease before and during

inoculation. In this light it is an interesting and important fact to note that those few who were inoculated during the incubation period presented a milder form of the disease than those from whom the infection arose.

The reactions have been reasonably slight. Locally, the site of inoculation presents a tender, painful wheal. When a vein is accidentally punctured a more severe local reaction results, the swelling, an ecchymosis, persisting several days. The neighboring lymphatic glands may become enlarged and tender. The duration of the latter symptom is very short, however, and the local soreness rarely lasts more than twenty-four to thirty-six hours. The constitutional reaction in my latest personal cases, some 400 in number, is as follows:—

	Per Cent.
Absent or slight, . . . . .	86
Moderate, <i>i.e.</i> , malaise, headache and fever not exceeding 100.5°, . .	10
Severe, <i>i.e.</i> , vomiting, diarrhoea, chills and fever reaching 102° to 103°, .	4

These symptoms last from twelve to twenty-four hours, rarely forty-eight hours. Furthermore, in only 5 instances has a moderate or severe reaction been produced in any individual by more than 1 of the 4 inoculations. Fifty per cent. of the moderate reactions followed the second injection, the first and third dividing the remainder nearly equally. Among the severe reactions, 50 per cent. were produced by the third, the first and second dividing the remainder. Only very rarely does the fourth inoculation produce any discomfort. I have observed that when inoculation is started on the eve of catamenia, or during the early days of the flow, constitutional reactions are apt to be more severe. As a result, I plan, as far as possible, not to have the first two injections fall within those days.

#### HOSPITAL INOCULATION.

During the first year my work was limited to the Massachusetts General Hospital, but since that time inoculations have been performed by me, or under my supervision, among the nurses and others intimately exposed to the disease in 23 hospitals in Massachusetts, through the efforts of Dr. Richardson. In all, 1,662 individuals have received this treatment. The result of hospital inoculations is told in a word by the following table:—

Individuals inoculated in hospitals, . . . . .	1,403
Individuals uninoculated (but exposed) in same hospitals, . . . . .	674
Cases of typhoid among the inoculated, excluding 3 who were inoculated during the incubation period (1 of these was a paratyphoid infection), . . . . .	3

Cases of true typhoid among inoculated, . . . . .	2
Cases among the uninoculated (9 of these were paratyphoid cases), . . . . .	17
Cases of true typhoid among uninoculated, . . . . .	8
Morbidity among inoculated (per cent.), . . . . .	.14
Morbidity among uninoculated (per cent.), . . . . .	1.19

The last figure is somewhat lower than those of Joslin (14) and the writer (15) quoted above, but it shows what may be expected among such large numbers of nurses unprotected by inoculation. The marked reduction among the inoculated needs no further comment. The two cases contracted among the inoculated occurred in the following manner: one, a year following inoculation, had cared for two fatal cases of typhoid without her hospital. Her disease was severe, but was followed by recovery. The other, two years after inoculation, while caring for several cases, received in the mouth some typhoid material. Although the mouth was washed with antiseptics a mild infection followed.

In the Massachusetts General Hospital, where inoculation has been in progress for three years, and where over 80 per cent. of the nurses and others exposed to typhoid have been protected, no cases of typhoid fever have been contracted. The following table illustrates exposure in the medical wards, during the typhoid season, of 90 nurses who have completed their course and 92 who are still in training:—

	Average Months of Typhoid Duty after Inoculation.	Average Months of Typhoid Night Duty.	Percentage of Nurses serving Night Duty during Typhoid Season (Per Cent.)
Pupils, . . . . .	2.42	.54	42
Graduates, . . . . .	2.88	.64	47
Total, . . . . .	2.64	.59	44

The high percentage of inoculated nurses serving night duty during the typhoid season is most suggestive, since that class furnishes most of the cases of the contracted disease. In all fairness it must be stated, however, that rather fewer cases of the disease have been treated in the hospital during this three-year period. But this reduction is in no way proportional to the decrease of the incidence above noted.

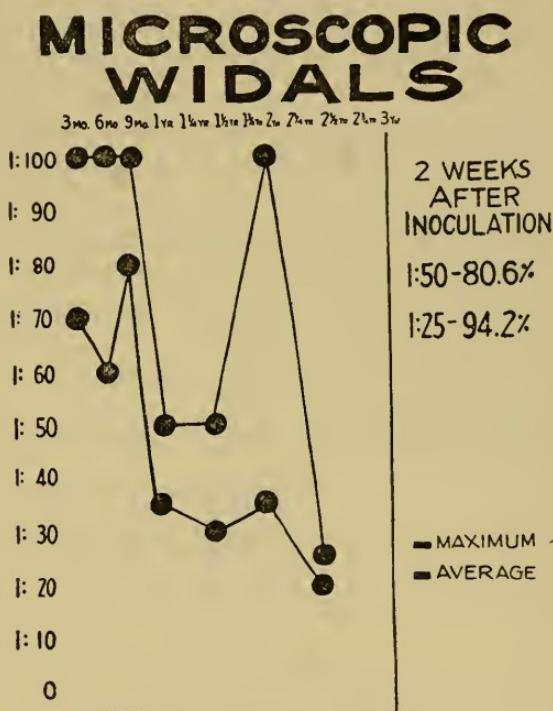
#### BLOOD CHANGES.

Agglutination reactions have been performed by the microscopic method because of its ease, accuracy and its moderate value. The first

100 cases showed positive reactions in the following dilutions two weeks following inoculation:—

	Per Cent.
$\frac{1}{60}$ or greater, . . . . .	80.6
$\frac{1}{25}$ or greater, . . . . .	94.2

Macroscopic agglutination reactions at an equal interval show positive results varying between  $\frac{1}{1000}$  and  $\frac{1}{10000}$ . This quality of the blood persists to a considerable degree for two years, but is still evident after two and one-half years. (See figure below.)



That an immunity exists in the presence of a positive agglutination reaction of even mild degree is most reasonable. But the converse is not true, since all are familiar with the usual transient character of the antitropic substances of the blood following an attack of the disease itself. Further investigations of blood changes, *i.e.*, bacteriolysins, opsonins, etc., have not been carried out, since those points are now well established.

## EPIDEMICS.

The employment of this treatment in epidemics has been very meagre. This has been due, no doubt, to the fear of the so-called "negative phase."

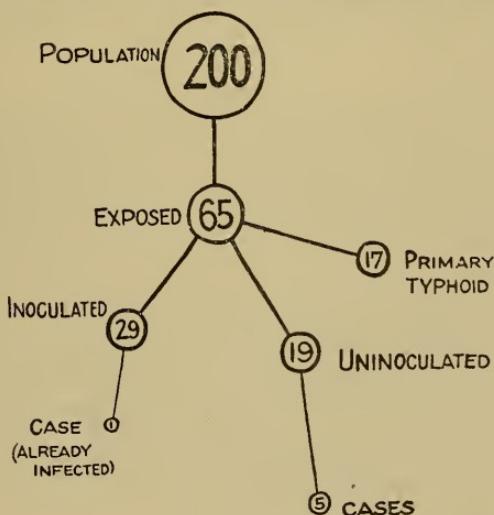
It has been attempted twice by me. In one instance the infection proved to be paratyphoid; and the results, though interesting, are of no great value. They are as follows:—

	Per Cent.
Morbidity among inoculated, . . . . .	6.6
Morbidity among uninoculated, . . . . .	12.0

These figures are somewhat striking, since each class embraces an equal number of individuals. Over 80 per cent. were inoculated during the incubation period, a fact which detracts considerably from the value of the statistics. But in spite of this, there is a considerable reduction of morbidity, and only two cases appeared after inoculation was completed. Inoculation during this epidemic was of very doubtful value.

The second epidemic was of greater interest and the results proved more satisfactory. The water supply of a limited number of people in a little Vermont village became contaminated with the typhoid organism from the excreta of an isolated individual who had died from the disease six months prior to the epidemic. The original primary cases, 17 in number, appeared simultaneously. Within a week 29 of the remaining 48 who had been exposed to the disease through the water supply had been inoculated; 19 remained uninoculated. Among the latter, 5 cases developed; among the former, 1. The latter presented his first symptoms immediately following his first inoculation. His disease was of a very mild variety. (See following figure.)

## GREENSBORO EPIDEMIC



The small size of this epidemic forbids drawing too broad conclusions, but it seems rational to advise the employment of this treatment, since no harm appears to result when the vaccine is given in a judicious manner. Furthermore, the absentee of cases contracted among the inoculated in this epidemic and in several isolated cases of immediate exposure seems to be far from a coincidence. Inoculation in the time of epidemics must be performed with care, since it is inevitable that many must be inoculated during the incubation period. The result of this accident is not serious, however. My experience would indicate that the onset of symptoms was hastened by this step, but that the infection was shorter and of a less severe character, possibly because of the destruction of organisms before they had multiplied to a sufficient extent to produce a natural reaction from the unassisted body.

Including this epidemic and other personal cases the final statistics are as follows:—

Inoculated individuals,	. . . . .	1,662
Uninoculated individuals,	. . . . .	700
Cases among inoculated (excepting those mentioned),	. . . .	2
Cases among uninoculated (with similar exceptions),	. . . .	13
Morbidity among inoculated (per cent.),	. . . . .	.12
Morbidity among uninoculated (per cent.),	. . . . .	1.86

#### CONCLUSIONS.

Frequent injections of small amounts of a low virulence vaccine cause slight inconvenience.

They seem to produce a protection among nurses, who are eight times more liable to the disease than the average individual.

Their morbidity, under ordinary conditions, is 1.4 per cent., or 20, cases among 1,403.

Only two cases developed under these conditions.

Case morbidity among the uninoculated is nearly nine times greater than among the inoculated, subjected to similar conditions.

No permanent untoward effects have risen from over 5,000 injections.

The blood picture indicates a certain protection lasting at least two and one-half years.

The use of this means of protection has been shown to be safe in two epidemics, and very efficient in at least one of them.

*Note.*—I am deeply indebted for this careful work in completing subsequent inoculations, and for excellent records, to Dr. E. M. Crane of Hardwick, Vt., and to those physicians in charge of the hospitals in which inoculation has been introduced.

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**TYPHOID PROPHYLACTIC TO BE DISTRIBUTED TO PHYSICIANS OF THE COMMONWEALTH.**

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The State Board of Health is prepared to furnish to the medical profession of the Commonwealth a prophylactic substance or vaccine, so called, for preventive inoculation against typhoid fever.

This prophylactic is furnished in small ampoules, of which three constitute a set. Each ampoule contains 1,000,000,000 dead typhoid bacilli. The prophylactic is to be given hypodermically, and the usual measures for preventing sepsis at the point of inoculation must be observed; that is to say, the syringe must be sterilized, the skin must be sterilized (by rubbing with 95 per cent. alcohol), and care must be taken that the ampoules are not contaminated at the time of opening. They are best opened by making a small file notch at the base of the neck, after which the neck can be easily broken off. The inoculation should be given at intervals of ten days: the first dose being 500,000,000; the second dose, 1,000,000,000 and the third dose, 1,000,000,000 of the bacilli. The best point at which inoculation may be made is on the outer surface of the left upper arm at the insertion of the deltoid muscle.

Only in very rare instances does there occur anything more than a mild, local reaction, that is to say, local redness, slight swelling and slight pain. Occasionally, the local reaction will be somewhat more marked, and there will be some constitutional symptoms, also, such as

headache, backache and fever. These symptoms pass off very rapidly, however, and cause no permanent disturbance. In fact, it is very rare for inoculated individuals to have to give up their ordinary occupations.

An ampoule once opened should not be used again.

It is not known exactly how long the immunity produced by these inoculations lasts, but it can be depended upon in all probability for at least two years and probably longer. There are no contra-indications against the use of the prophylactic in the presence of an epidemic. In fact, its use is rather to be recommended under such conditions. In case, however, the person to be inoculated has had typhoid in the past, reactions may be more severe and the dose should be reduced one-half. Care should be taken, furthermore, with individuals who are suffering from chronic infections, as such infections have been known to be aggravated temporarily by antityphoid inoculation.

The prophylactic may be obtained by applying to the local board of health in a manner similar to that employed in the case of diphtheria antitoxin and smallpox vaccine.

For any further information concerning this subject, application should be made to the secretary of the State Board of Health, Room 145, State House, Boston, Mass.

New Series.

NOVEMBER, 1912.

Vol. 7. No. 11.

# MONTHLY BULLETIN



OF THE

## STATE BOARD OF HEALTH

OF

### MASSACHUSETTS.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING Nov. 2, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infections Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, Other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	197	46	58	15	16	—	—	—	—	—	—
Worcester, .	145,986	31	2	8	2	2	1	—	1	—	—	—
Fall River, .	119,295	40	18	20	4	4	—	—	—	—	—	—
Lowell, .	106,294	27	11	4	7	2	—	—	—	—	—	—
Cambridge, .	104,839	27	4	11	7	2	—	—	—	—	—	—
New Bedford, .	96,652	23	5	7	1	—	—	—	—	—	—	—
Lynn, .	89,336	12	2	3	3	—	—	—	—	—	—	—
Springfield, .	88,926	22	6	4	2	—	—	—	—	—	—	—
Lawrence, .	85,892	9	5	9	2	—	—	—	—	—	—	—
Somerville, .	77,236	16	2	2	1	—	—	—	—	—	—	—
Holyoke, .	57,730	13	3	1	5	—	—	—	—	—	—	—
Brockton, .	56,878	10	2	—	1	—	—	—	—	—	—	—
Malden, .	44,404	6	2	—	—	—	—	—	—	—	—	—
Haverhill, .	44,115	6	1	5	2	1	—	—	—	—	—	—
Salem, .	43,697	15	4	4	1	—	—	—	—	—	—	—
Newton, .	39,806	9	2	2	—	—	—	—	—	—	—	—
Fitchburg, .	37,826	6	3	1	—	—	—	—	—	—	—	—
Taunton, .	34,259	14	4	8	1	4	—	—	—	—	—	—
Everett, .	33,484	9	1	2	—	—	—	—	—	—	—	—
Quincy, .	32,642	—	—	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	13	1	2	1	—	—	—	—	—	—	—
Pittsfield, .	32,121	8	3	4	1	—	—	—	—	—	—	—
Waltham, .	27,834	6	3	1	1	—	—	—	—	—	—	—
Brookline, .	27,792	6	1	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	3	—	1	1	—	—	—	—	—	—	—
Gloucester, .	24,398	6	1	1	—	—	—	—	—	—	—	—
Medford, .	23,150	—	—	2	2	—	—	—	—	—	—	—
North Adams, .	22,019	9	5	4	2	2	—	—	—	—	—	—
Northampton, .	19,431	7	—	4	2	2	—	—	—	—	—	—
Beverly, .	18,650	6	—	2	—	—	—	—	—	—	—	—
Revere, .	18,219	7	1	1	1	—	—	—	—	—	—	—
Leominster, .	17,580	3	2	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	1	—	—	—	—	—	—	—	—	—	—
Westfield, .	16,044	4	1	2	—	—	—	—	—	—	—	—
Peabody, .	15,721	2	1	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	1	—	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	2	1	2	—	—	—	—	—	—	—	—
Newburyport, .	14,949	3	—	2	2	—	—	—	—	—	—	—
Gardner, .	14,699	5	—	—	2	—	—	—	—	—	—	—
Marlborough, .	14,579	3	—	—	2	—	—	—	—	—	—	—
Clinton, .	13,075	3	1	—	—	—	—	—	—	—	—	—
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	5	3	2	—	—	—	—	—	—	—	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	1	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	2	1	—	1	—	—	—	—	—	—	—
Plymouth, .	12,141	5	—	2	—	—	—	—	—	—	—	—
Webster, .	11,509	1	—	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	—	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	—	—	—	—	—	—	—	—	—	—
Arlington, .	11,187	1	—	—	1	—	—	—	—	—	—	—
Greenfield, .	10,427	4	1	2	—	—	—	—	—	—	—	—
Winthrop, .	10,132	4	1	—	—	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,536,340	623	148	194	69	49	8	10	4	1	1	1
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WEEK ENDING NOV. 9, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.		Deaths under Five Years.		DEATHS FROM —					
		Principal Infectious Diseases.	Tuberculosis, Pneumonia (or not classified).	Auto. Lung Diseases.	Tuberculosis, other than Pneumonia.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.	Whooping Cough.	
Boston, .	686,092	223	42	70	32	14	—	—	—	—	
Worcester, .	145,986	41	10	11	3	3	2	—	—	—	
Fall River, .	119,295	39	17	17	2	2	—	—	—	—	
Lowell, .	106,294	30	10	6	2	2	—	—	—	—	
Cambridge, .	104,839	33	3	9	3	3	—	—	—	—	
New Bedford, .	96,652	35	12	11	3	3	—	—	—	—	
Lynn, .	89,336	15	5	4	1	1	—	—	—	—	
Springfield, .	88,926	31	5	7	2	2	—	—	—	—	
Lawrence, .	85,892	13	7	4	1	1	1	1	—	—	
Somerville, .	77,236	15	4	4	—	—	—	—	—	—	
Holyoke, .	57,730	17	10	4	—	—	—	—	—	—	
Brockton, .	56,878	13	1	3	—	—	—	—	—	—	
Malden, .	44,404	9	3	5	—	—	—	—	—	—	
Haverhill, .	44,115	12	2	6	3	3	—	—	—	—	
Salem, .	43,697	11	2	1	—	—	1	1	—	—	
Newton, .	39,806	7	—	—	—	—	—	—	—	—	
Fitchburg, .	37,826	7	4	1	—	—	1	—	—	—	
Taunton, .	34,259	9	2	5	3	1	—	—	—	—	
Everett, .	33,484	3	—	1	1	—	—	—	—	—	
Quincy, .	32,642	—	—	—	—	—	—	—	—	—	
Chelsea, .	32,452	7	2	1	—	—	1	—	—	—	
Pittsfield, .	32,121	10	2	3	—	—	2	—	—	1	
Waltham, .	27,834	5	2	2	—	—	—	—	—	—	
Brookline, .	27,792	1	—	—	—	—	—	—	—	—	
Chicopee, .	25,401	4	2	2	—	—	1	—	—	1	
Gloucester, .	24,398	—	—	—	—	—	—	—	—	—	
Medford, .	23,150	7	2	—	—	—	—	—	—	—	
North Adams, .	22,019	9	3	1	—	—	—	—	—	—	
Northampton, .	19,431	3	—	—	—	—	—	—	—	—	
Beverly, .	18,650	4	—	1	—	—	—	—	—	—	
Revere, .	18,219	—	—	—	—	—	—	—	—	—	
Leominster, .	17,580	6	6	2	—	—	—	—	—	—	
Attleborough, .	16,215	1	1	1	—	—	—	—	—	—	
Westfield, .	16,044	3	—	1	—	—	1	—	—	—	
Peabody, .	15,721	2	—	1	—	—	—	—	—	1	
Melrose, .	15,715	4	2	1	—	—	—	—	—	—	
Woburn, .	15,308	7	2	1	—	—	1	—	—	—	
Newburyport, .	14,949	2	—	—	—	—	—	—	—	—	
Gardner, .	14,699	1	—	—	—	—	—	—	—	—	
Marlborough, .	14,579	3	—	—	—	—	—	—	—	—	
Clinton, .	13,075	4	1	2	—	1	1	—	—	—	
Milford, .	13,055	—	1	—	—	—	—	—	—	—	
Adams, .	13,026	5	1	2	—	—	1	—	1	—	
Framingham, .	12,945	—	—	—	—	—	—	—	—	—	
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	
Watertown, .	12,875	2	—	—	—	—	—	—	—	—	
Southbridge, .	12,592	2	—	1	—	—	1	—	—	—	
Plymouth, .	12,141	1	—	1	—	—	1	—	—	—	
Webster, .	11,509	2	—	1	—	—	—	—	—	—	
Methuen, .	11,448	—	—	—	—	—	—	—	—	—	
Wakefield, .	11,404	5	2	—	—	—	—	—	—	—	
Arlington, .	11,187	1	—	—	—	—	—	—	—	—	
Greenfield, .	10,427	5	1	—	—	—	—	—	—	—	
Winthrop, .	10,132	5	1	2	—	2	—	—	—	—	

## Recapitulation.

Total of reporting towns, .	2,492,723	679	174	199	82	51	5	6	8	2	2
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WEEK ENDING NOV. 16, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Earth.	Deaths under Five Years.	DEATHS FROM —								
				Principal Infectious Diseases,	Tuberculosis, Pulmonary (or not classified).	Acute Lung Diseases,	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Sentent Fever.	Measles.	Whooping Cough.
Boston, .	686,092	190	44	49	19	17	4	—	—	—	—	—
Worcester, .	145,986	28	11	8	4	2	2	—	—	1	—	—
Fall River, .	119,295	36	15	7	3	3	3	—	—	—	—	—
Lowell, .	106,294	22	7	5	5	5	3	—	—	—	—	—
Cambridge, .	104,839	18	4	8	2	1	1	—	—	—	—	—
New Bedford, .	96,652	20	9	8	4	1	1	—	—	—	—	—
Lynn, .	89,336	20	9	6	3	2	2	—	—	—	—	—
Springfield, .	88,926	34	8	4	2	1	1	—	—	—	—	—
Lawrence, .	85,892	—	—	2	2	2	2	—	—	—	—	—
Somerville, .	77,236	14	3	9	3	3	1	—	—	—	—	—
Holyoke, .	57,730	18	6	2	1	1	1	—	—	—	—	—
Brockton, .	56,878	15	1	2	1	1	1	—	—	—	—	—
Malden, .	44,404	10	2	4	2	1	1	—	—	—	—	—
Haverhill, .	44,115	8	2	—	—	—	—	—	—	—	—	—
Salem, .	43,697	7	—	—	—	—	—	—	—	—	—	—
Newton, .	39,806	10	2	2	1	1	1	—	—	—	—	—
Fitchburg, .	37,826	5	2	—	—	—	—	—	—	—	—	—
Taunton, .	34,259	10	—	1	—	—	1	—	—	—	—	—
Everett, .	33,484	3	—	—	—	—	—	—	—	—	—	—
Quincy, .	32,642	—	—	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	12	1	4	2	2	2	—	—	—	—	—
Pittsfield, .	32,121	8	1	2	1	1	1	—	—	—	—	—
Waltham, .	27,834	5	—	2	1	1	1	—	—	—	—	—
Brookline, .	27,792	6	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	10	8	4	2	1	1	—	—	—	—	1
Gloucester, .	24,398	6	2	—	—	—	—	—	—	—	—	—
Medford, .	23,150	7	1	1	—	—	—	—	—	—	—	—
North Adams, .	22,019	6	1	12	12	1	1	—	—	—	—	—
Northampton, .	19,431	7	—	1	—	—	—	—	—	—	—	—
Beverly, .	18,650	9	2	2	1	—	—	—	—	—	1	—
Revere, .	18,219	2	—	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	3	—	1	1	1	1	—	—	—	—	—
Attleborough, .	16,215	6	—	3	1	1	1	—	—	—	—	—
Westfield, .	16,044	5	—	3	—	—	3	—	—	—	—	—
Peabody, .	15,721	1	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	4	1	—	—	—	—	—	—	—	—	—
Woburn, .	15,308	3	2	2	—	—	2	—	—	—	—	—
Newburyport, .	14,949	3	—	1	1	—	2	—	—	—	—	—
Gardner, .	14,699	2	2	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	3	—	—	—	—	—	—	—	—	—	—
Clinton, .	13,075	2	—	1	—	—	1	1*	—	—	—	—
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	6	1	3	—	—	—	—	—	—	—	—
Framingham, .	12,948	1	—	—	—	—	—	—	—	—	1	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	1	—	—	—	—	—	—	—	—	—	—
Southbridge, .	12,592	1	1	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	3	2	3	1	1	1	—	—	—	—	—
Webster, .	11,509	1	1	1	—	—	—	—	—	—	—	—
Methuen, .	11,448	—	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	3	—	1	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	1	1	1	1	—	—	—	—	—
Greenfield, .	10,427	3	1	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	2	—	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,450,448	601	156	162	62	51	8	8	4	1	1	-
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WEEK ENDING NOV. 23, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —							
				Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.
Boston, .	686,092	212	39	62	25	19	2	2	1	1	2
Worcester, .	145,986	38	10	8	4	3	1	—	—	—	—
Fall River, .	119,295	27	11	13	7	5	1	1	1	—	—
Lowell, .	106,294	37	14	11	4	4	1	1	1	—	—
Cambridge, .	104,839	33	10	12	2	4	1	1	1	—	—
New Bedford, .	96,652	23	12	8	1	1	1	1	1	—	—
Lynn, .	89,336	18	2	3	1	1	1	1	1	—	—
Springfield, .	88,926	26	5	8	1	1	1	1	1	—	—
Lawrence, .	85,892	13	7	4	1	1	1	1	1	—	—
Somerville, .	77,236	25	6	6	3	3	1	1	1	—	—
Holyoke, .	57,730	24	5	3	3	1	1	1	1	—	—
Brockton, .	56,878	13	3	2	1	1	1	1	1	—	—
Malden, .	44,404	8	3	2	1	1	1	1	1	—	—
Haverhill, .	44,115	6	3	2	1	1	1	1	1	—	—
Salem, .	43,697	17	8	3	2	2	1	1	1	—	—
Newton, .	39,806	11	5	2	1	1	1	1	1	—	—
Fitchburg, .	37,826	9	4	2	1	1	1	1	1	—	—
Taunton, .	34,259	12	3	6	2	2	1	1	1	—	—
Everett, .	33,484	6	—	1	1	1	1	1	1	—	—
Quincy, .	32,642	—	—	5	3	2	1	1	1	—	—
Chelsea, .	32,452	14	3	3	3	1	1	1	1	—	—
Pittsfield, .	32,121	10	1	2	1	1	1	1	1	—	—
Waltham, .	27,834	6	2	1	1	1	1	1	1	—	—
Brookline, .	27,792	7	—	1	1	1	1	1	1	—	—
Chicopee, .	25,401	8	4	3	1	1	1	1	1	—	—
Gloucester, .	24,398	4	1	1	1	1	1	1	1	—	—
Medford, .	23,150	4	—	2	1	1	1	1	1	—	—
North Adams, .	22,019	6	4	2	1	1	1	1	1	—	—
Northampton, .	19,431	6	1	1	1	1	1	1	1	—	—
Beverly, .	18,650	2	—	1	1	1	1	1	1	—	—
Revere, .	18,219	3	—	1	1	1	1	1	1	—	—
Leominster, .	17,580	2	—	1	1	1	1	1	1	—	—
Attleborough, .	16,215	3	—	1	1	1	1	1	1	—	—
Westfield, .	16,044	8	2	3	2	2	1	1	1	—	—
Peabody, .	15,721	6	—	2	1	1	1	1	1	—	—
Melrose, .	15,715	3	—	1	1	1	1	1	1	—	—
Woburn, .	15,308	3	—	1	1	1	1	1	1	—	—
Newburyport, .	14,949	2	—	1	1	1	1	1	1	—	—
Gardner, .	14,699	4	—	1	1	1	1	1	1	—	—
Marlborough, .	14,579	6	1.	—	1	1	1	1	1	—	—
Clinton, .	13,075	3	—	1	1	1	1	1	1	—	—
Milford, .	13,055	—	—	1	1	1	1	1	1	—	—
Adams, .	13,026	2	—	1	1	1	1	1	1	—	—
Framingham, .	12,948	2	1	—	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	4	1	—	—	—	—	—	—	—	—
Southbridge, .	12,592	2	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	—	—	—	—	—	—	—	—	—
Webster, .	11,509	2	1	—	1	1	—	—	—	—	—
Methuen, .	11,448	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	1	—	—	—	—	—	—	—	—
Arlington, .	11,187	2	—	—	—	—	—	—	—	—	—
Greenfield, .	10,427	2	—	—	—	—	—	—	—	—	—
Winthrop, .	10,132	1	—	—	—	—	—	—	—	—	—

## Recapitulation.

Total of reporting towns, .	2,536,340	689	171	189	76	53	12	9	5	1	2	2
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WEEK ENDING Nov. 30, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.		DEATHS FROM —										
				Deaths under Five Years.	Principal Infectious Diseases.	Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Malaria.	Whooping Cough.	
Boston, .	686,092	214	49		78	31	27							
Worcester, .	145,986	37	2		11	8	1							
Fall River, .	119,295	36	16		15	3	4							
Lowell, .	106,294	24	7		5	3	1							
Cambridge, .	104,839	28	6		12	10	1							
New Bedford, .	96,652	32	11		10	4	3							
Lynn, .	89,336	21	3		6	1	1							
Springfield, .	88,926	21	3		4	—	—							
Lawrence, .	85,892	—	—		7	3	—							
Somerville, .	77,236	18	5		6	3	—							
Holyoke, .	57,730	18	4		7	3	—							
Brockton, .	56,878	10	—		7	3	—							
Malden, .	44,404	9	3		2	1	—							
Haverhill, .	44,115	8	1		3	2	—							
Salem, .	43,697	10	3		—	—	—							
Newton, .	39,806	7	2		—	—	—							
Fitchburg, .	37,826	15	4		—	—	—							
Taunton, .	34,259	7	3		—	—	—							
Everett, .	33,484	8	1		—	—	—							
Quincy, .	32,642	—	—		—	—	—							
Chelsea, .	32,452	11	1		—	—	—							
Pittsfield, .	32,121	8	4		—	—	—							
Waltham, .	27,834	6	2		—	—	—							
Brookline, .	27,792	6	—		—	—	—							
Chicopee, .	25,401	10	5		4	4	4							
Gloucester, .	24,398	1	—		—	—	—							
Medford, .	23,150	5	—		1	—	—							
North Adams, .	22,019	7	3		2	2	2							
Northampton, .	19,431	9	—		1	1	1							
Beverly, .	18,650	4	1		—	—	—							
Revere, .	18,219	4	—		—	—	—							
Leominster, .	17,580	3	—		—	—	—							
Attleborough, .	16,215	6	—		—	—	—							
Westfield, .	16,044	6	1		—	—	—							
Peabody, .	15,721	6	1		—	—	—							
Melrose, .	15,715	2	—		—	—	—							
Woburn, .	15,308	3	1		—	—	—							
Newburyport, .	14,949	4	—		—	—	—							
Gardner, .	14,699	4	—		—	—	—							
Marlborough, .	14,579	4	—		—	—	—							
Clinton, .	13,075	4	2		—	—	—							
Milford, .	13,055	—	—		—	—	—							
Adams, .	13,026	3	1		—	—	—							
Framingham, .	12,948	3	1		—	—	—							
Weymouth, .	12,895	—	—		—	—	—							
Watertown, .	12,875	5	1		—	—	—							
Southbridge, .	12,592	3	—		—	—	—							
Plymouth, .	12,141	1	—		—	—	—							
Webster, .	11,509	3	2		—	—	—							
Methuen, .	11,448	—	—		—	—	—							
Wakefield, .	11,404	3	—		—	—	—							
Arlington, .	11,187	—	—		—	—	—							
Greenfield, .	10,427	2	—		—	—	—							
Winthrop, .	10,132	5	—		—	—	—							

## Recapitulation.

Total of reporting towns, .	2,439,261	664	151	199	92	54	6	13	4	1	2	-
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**WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS  
DISEASES.**

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DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF NOV. 2, 9, 16, 23 AND 30, 1912.

DISEASE.	Place.	WEEK ENDING—				
		Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.
Diarrhoeal diseases,	Boston, . . .	21	13	7	7	8
	Worcester, . . .	—	1	—	—	—
	Fall River, . . .	9	4	9	3	6
	Lowell, . . .	—	—	—	1	—
	Cambridge, . . .	1	3	1	1	1
	New Bedford, . . .	3	3	2	3	1
	Springfield, . . .	—	2	—	2	—
	Lawrence, . . .	2	1	—	—	—
	Somerville, . . .	—	1	—	—	—
	Holyoke, . . .	1	—	—	—	1
	Brockton, . . .	—	—	1	2	—
	Malden, . . .	—	1	1	—	1
	Salem, . . .	2	—	—	—	—
	Fitchburg, . . .	—	—	—	1	—
	Taunton, . . .	3	1	—	—	1
	Pittsfield, . . .	—	—	—	—	3
	North Adams, . . .	1	1	—	—	—
	Northampton, . . .	1	—	—	1	—
	Attleborough, . . .	—	1	—	—	—
	Westfield, . . .	1	—	—	—	—
	Gardner, . . .	—	—	1	—	—
	Plymouth, . . .	1	—	—	—	—
	Greenfield, . . .	1	—	—	—	—
Cerebro-spinal meningitis,	Boston, . . .	—	1	1	—	—
	Worcester, . . .	1	2	—	—	—
	New Bedford, . . .	—	—	—	—	1
	Lynn, . . .	—	—	1	—	—
	Pittsfield, . . .	1	—	—	—	—
	Greenfield, . . .	1	—	—	—	—
Erysipelas, . . .	Boston, . . .	—	—	—	1	1
	Springfield, . . .	—	—	—	1	—
	Lawrence, . . .	—	—	—	1	—
	Brockton, . . .	—	1	—	—	—
	Taunton, . . .	—	—	—	1	—
	Webster, . . .	—	1	—	—	—
Influenza, . . .	Springfield, . . .	—	—	—	1	—
	Taunton, . . .	—	—	—	1	—
	Northampton, . . .	—	—	1	—	—
Anterior poliomyelitis,	Boston, . . .	—	1	—	—	—
	Springfield, . . .	—	—	1	—	—
	Haverhill, . . .	—	—	—	1	—

## DEATHS FROM INFECTIOUS DISEASES, ETC.—Concluded.

DISEASE.	Place.	WEEK ENDING—				
		Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.
Puerperal fever, . . .	Boston, . . .	1	2	1	1	—
	Worcester, . . .	—	—	—	—	1
	Fall River, . . .	—	1	—	1	—
	Brockton, . . .	—	—	—	—	1
Tetanus, . . . .	Haverhill, . . .	1	—	—	—	—

## WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF NOV.  
2, 9, 16, 23 AND 30, 1912.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—					
	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.	Total.
Diphtheria, . . . . .	139	152	177	195	135	785
Measles, . . . . .	186	188	257	259	358	1,248
Scarlet fever, . . . . .	107	136	106	150	149	648
Typhoid fever, . . . . .	43	38	56	31	27	195
Tuberculosis, pulmonary (or not classified), . . . . .	123	129	130	120	154	656
Tuberculosis, other than pulmonary, . . . . .	5	8	7	7	8	35
Cerebro-spinal meningitis, . . . . .	3	3	3	2	3	14
Meningitis, other than cerebro-spinal, . . . . .	—	—	—	—	—	—
Whooping cough, . . . . .	32	55	61	42	72	262
Varicella, . . . . .	81	97	95	101	84	458
Ophthalmia neonatorum, . . . . .	29	36	33	35	29	162
Anterior poliomyelitis, . . . . .	3	3	4	3	—	13
Mumps, <sup>1</sup> . . . . .	14	8	12	8	7	49
Smallpox, . . . . .	1	3	—	—	3	7
Trachoma, . . . . .	1	1	3	—	—	5
Erysipelas, <sup>1</sup> . . . . .	—	—	—	—	1	1
Malaria, <sup>1</sup> . . . . .	—	1	1	—	1	3
Tetanus, . . . . .	1	—	1	—	—	2
Leprosy, . . . . .	1	—	—	—	—	1
Anthrax, . . . . .	2	—	—	2	—	4

<sup>1</sup> Erysipelas and mumps are not diseases notifiable under section 52 of chapter 75 of the Revised Laws. The figures concerning these diseases are, therefore, incomplete.

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of November, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder, .	1	-	1	Lard, . . .	3	-	3
Butter, . . .	5	-	5	Meat products:—			
Canned fruits and vegetables, .	2	-	2	Canned meats, .	-	2	2
Cheese, . . .	2	-	2	Tripe, . .	1	-	1
Cider, . . .	1	2	3	Sausages, . .	9	2	11
Cocoa, . . .	7	1	8	H a m b u r g			
Coffee, . . .	5	6	11	steak, . .	5	-	5
Condensed milk, .	7	-	7	Mince meat, . .	4	-	4
Cream, . . .	2	-	2	Molasses, . . .	1	-	1
Eggs, . . .	1	-	1	N o n a l c o h o l i c			
Flavoring extracts:—				drinks, . . .	11	-	11
Lemon, . .	1	-	1	Olive oil, . .	4	2	6
Raspberry (artificial), .	1	-	1	Salad dressing, . .	3	-	3
Fruit juice:—				Spices, . . .	6	-	6
Lime, . . .	4	-	4	Sugar, . . .	1	-	1
Honey, . . .	2	-	2	Syrup, . . .	1	-	1
Jams and jellies,	8	-	8	Vinegar, . . .	6	4	10
				Table sauce, . .	-	1	1
				Total, . . .	104	20	124

The samples of drugs found to be adulterated were alcohol, bromide of potassium, proprietary drugs, quinine pills, sweet spirit of nitre, spirit of peppermint, tincture of iodine.

The cities and towns in which samples were collected were: Athol, Boston, Brookline, Cambridge, Clinton, Concord, Dalton, Dedham, Dover, Dudley, Everett, Fall River, Fitchburg, Gardner, Great Barrington, Lee, Leominster, Lincoln, Malden, Marblehead, Maynard, Orange, Pittsfield, Salem, Somerville, Southbridge, Waltham, Webster, Weston, Weymouth, Winchendon, Worcester.

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

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Four convictions were secured during the month of November, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Jesse D. Amoral, . . . .	Fall River, .	Milk (total solids 10.67). <sup>1</sup>
2	Bert M. Frye, . . . .	Leominster, .	Milk (cans not marked). <sup>2</sup>
3	Bert M. Frye, . . . .	Leominster. .	Milk (cans not marked). <sup>2</sup>
4	Alexander G. Levalley, . .	Fitchburg, .	Milk (cans not marked). <sup>2</sup>

<sup>1</sup> Watered.

<sup>2</sup> Skimmed.

Amount of fines imposed, \$150.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR NOVEMBER, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.	
			1	2
18329	Mogul Powdered Sweet Cocoa.	Hooton Cocoa Company, Newark, N. J., . . . . .	Contained 31.85 per cent. sucrose; percentage not stated on label.	
1227-S	Delicious coffee and chicory.	Standard Grocery Company, Boston, Mass., . . . . .	Contained 40 per cent. chicory; percentage of chicory not stated on label.	
1233-S	Eastern Special, "a combination of good coffee and fine chicory,"	L. D. Margolis Company, Boston, Mass., . . . . .	Contained 8 per cent. chicory; percentage of chicory not stated on label.	
1235-S	Semi-Cup brand coffee, "contains good coffee with chicory added."	L. D. Margolis Company, Boston, Mass., . . . . .	Contained 8 per cent. chicory; percentage of chicory not stated on label.	
1341-S	Spirit of nitrous ether,	Hawthorn Pharmacy, John C. Keane, Salem, Mass., . . . . .	67 per cent. U. S. P. strength.	
1343-S	Spirit of nitrous ether,	Depot Pharmacy, J. R. Goddu, Salem, Mass., . . . . .	76 per cent. U. S. P. strength.	
1345-S	Spirit of nitrous ether,	Upton & Frishoe, Salem, Mass., . . . . .	56 per cent. U. S. P. strength.	
18374	Spirit of peppermint,	George H. Hartwell, Southbridge, Mass., . . . . .	34 per cent. U. S. P. strength.	
18378	Spirit of peppermint,	Theodore St. Orie, Southbridge, Mass., . . . . .	66 per cent. U. S. P. strength.	
18373	Tincture of iodine,	George H. Hartwell, Southbridge, Mass., . . . . .	65 per cent. U. S. P. strength.	
18350	Milk, . . . . .		Total solids, 10.78 per cent.; fat, 3.20 per cent.; contained added water.	
18351	Milk, . . . . .		Total solids, 11.20 per cent.; fat, 3.10 per cent.; contained added water.	
q 9989	Wadleigh Bros., Southbridge, Mass., . . . . .		Total solids, 12.20 per cent.; fat, 4.20 per cent.; contained added water.	
q 9990		Charles W. Wetherbee, Stow, Mass., . . . . .	Total solids, 12.14 per cent.; fat, 4.20 per cent.; contained added water.	
q 9991	Milk, . . . . .		Total solids, 11.70 per cent.; fat, 3.80 per cent.; contained added water.	
q 9992			Total solids, 11.90 per cent.; fat, 3.90 per cent.; contained added water.	
q 9995			Total solids, 11.54 per cent.; fat, 3.40 per cent.; contained added water.	

q 10010		Total solids, 9.68 per cent.; fat, 3.05 per cent.; contained added water.
q 10011		Total solids, 11.92 per cent.; fat, 3.85 per cent.; contained added water.
q 10013		Total solids, 11.12 per cent.; fat, 3.60 per cent.; contained added water.
q 10014	Milk,	Total solids, 12.04 per cent.; fat, 3.90 per cent.; contained added water.
q 10018		Total solids, 11.04 per cent.; fat, 3.70 per cent.; contained added water.
q 10019		Total solids, 11.08 per cent.; fat, 3.70 per cent.; contained added water.
q 10001	Milk,	Total solids, 10.10 per cent.; fat, 1.85 per cent.; proteins, 3.02 per cent.; skinned milk.
q 10002		Total solids, 10.20 per cent.; fat, 2.10 per cent.; proteins, 2.72 per cent.; skinned milk.
q 10035	Milk,	Total solids, 9.56 per cent.; fat, 1.30 per cent.; proteins, 2.87 per cent.; skinned milk.
q 10066		Total solids, 10.10 per cent.; fat, 1.20 per cent.; proteins, 3.24 per cent.; skinned milk.

## INSPECTION OF DAIRIES.

During the month of November, 1912, 90 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Millbury, . . . . .	9	5	55.56	4	44.44
Second inspection, . . . . .	27	14	51.85	13	48.15
Sutton, . . . . .	20	7	35.00	13	65.00
Second inspection, . . . . .	34	15	44.12	19	55.88
<b>Total number of dairies examined, . . . . .</b>					90
<b>Number found to be free from objectionable conditions, . . . . .</b>					41
<b>Number concerning which letters were sent, . . . . .</b>					49
<b>Total number of conditions to which attention was called, . . . . .</b>					124
<b>Percentage of dairies which passed inspection, . . . . .</b>					45.56

In addition to the above, 37 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 29 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow:—

## MILLBURY.

## Class A.

Dolan, Edward	Stowe, G. B.*
Dolan, John*†	Stowe, G. I.*†

## Class B.

Adams, Henry B.*	Davidson, H. W.*	Matson, Louis
Alsing, L. J.*	Gilson, J.*†	Miller, L. H.*
Broberg, Fred	Goddard, H. M.*†	Pearson Peter
Carlstrom, Carl*†	Hackstrom, C.*	Rice, Fred H.*†
Carter, Henry W.*†	Kingsley, H. F.*	St. Joseph's Industrial School

## SUTTON.

## Class A.

Barnes, G. H.	Keigurn, Mrs. L. G.	Perry, George N.*
Brigham, Dexter A.*†	Manchaug Mills	Valliere, Henry
Brigham, Estate of H. M.*†		

## Class B.

Carlstrom, August*	Moore, W. H.*	Stockwell & Gifford*
Dodge Brothers*	Heslinger, John	Stockwell, H. Scott*
Donaldson, E. W.	Putnam, Miss Etta*	"Town Farm"*
Malhoit, Louis N.*	Putnam, Henry Wellington*	Wallace, Sumner*
Moo, John*	Putnam, Irving W.*	Woodward, H. L.

\* Second inspection.

† Reported favorably on first inspection.

**PROPRIETARY PREPARATION ADVERTISED AS UNSALABLE  
IN NOVEMBER, 1912**

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Dewey's Lung Medicine (a Cure for Bronchitis and the First Stage of Consumption).

**STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF THE MONTHLY BULLETIN OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS, PUBLISHED MONTHLY AT BOSTON, MASS., REQUIRED BY THE ACT OF AUG. 24, 1912.**

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**NOTE.**—This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of classification), Washington, D. C., and retain the other in the files of the post office.

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.....  
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(Signed) **MARK W. RICHARDSON,**  
(Signature of editor, publisher, business manager or owner.)  
*Secretary Massachusetts State Board of Health.*

THE COMMONWEALTH OF MASSACHUSETTS,  
OFFICE OF THE SECRETARY,  
BOSTON, Oct. 25, 1912.

I hereby certify that, at the date of the attestation hereunto annexed, Mark W. Richardson was the secretary of the State Board of Health for this Commonwealth duly elected and qualified, and that to his acts and attestations, as such, full faith and credit are and ought to be given, in and out of court; and further, that his signature to the annexed instrument is genuine.

In testimony of which I have hereunto affixed the Great Seal of the Commonwealth the date first above written.

[STATE SEAL]

(Signed) ALBERT P. LANGTRY,  
*Secretary of the Commonwealth.*

### THE ERADICATION OF THE SOCIAL DISEASES IN LARGE CITIES.<sup>1</sup>

ROBERT N. WILLSON, M.D., PHILADELPHIA.

No more time need be spent in discussing the possibility or the impossibility of eradicating the contagious social diseases, syphilis and gonococcus infection than in relating their ubiquity or their influence on all classes of society. Suffice it to say that rich and poor, intelligent and stupid, moral, immoral and unmoral, innocent and guilty, are paying the price of centuries of an ignorant, ill-considered false modesty in terms of morbidity and mortality that probably surpass the sum of all other contagious influences combined. If a computation were made of the acute venereal infections, their complications and active sequelæ, the brain and cord lesions, the insanities and idiocies, the inherited and acquired deformities and destructive lesions, the partially and totally blind, the abortions and stillbirths, the operations on the abdomens of innocent as well as of guilty women, the male and female sterility, the army of infant deaths, the apoplexies, the lowered vitalities of those not manifestly diseased, the moral bias and weakness, and the degeneracies of mind and heart directly or indirectly traceable to the so-called social diseases, there would result a seriousness and perhaps a tendency to reflection throughout humankind that would forecast at least a profound upheaval. The physical results form only the beginning of the influence of the social diseases on the world at large. The broken homes, the divorces, the desertions, the suicides, the incapacity for work, the wages lost, the hospitals and asylums rendered necessary, the cost of treatment,

<sup>1</sup> Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912. Reprinted from Journal American Medical Association, Sept. 21, 1912.

form only a few of the points at which the diseases of immorality impinge on both the innocent and the guilty portions of society. It seems incredible that up to the present syphilis and gonococcus infection are, officially speaking, nonexistent, and that as far as the national and to a great extent the municipal authorities are concerned are deserving only of contempt or complete disregard. In the army and the navy alone are they officially recognized by the national government as diseases. The horde of immigrants that enter this country every year is examined for every infection save these two. The accurate and actual cause is placed on the death-certificate, the country over, in every instance save of these two diseases.

There is before us, therefore, a task to which society at large, and especially the medical portion of it, must straightway address itself. The fact that the problem ramifies in and out through animal passion and private and public immorality renders it more difficult, to be sure, but none the less insistent, and none the less finally soluble. Smallpox once appeared hopelessly and permanently beyond control; tuberculosis was only recently regarded with complacent resignation. The social diseases await the same sharp awakening of a people that have been too long asleep, and the application of measures that are within our grasp in spite of all pessimism to the contrary.

#### AN EDUCATED PUBLIC.

In the first place, and absolutely essential to the success of any attempt at controlling influences so insidious as the diseases that are fostered mainly by and through immorality, is the sane, quiet, complete sex-education of the American people. Granted not only a knowledge but a realization, a thorough appreciation of the facts, and radical action will follow, on the part of womankind at least, and eventually from the side of the traditionally less virtuous male portion of society. On a health basis only, in my opinion, is the social evil a soluble problem. In a competent knowledge of the existing conditions of the public health lies the first and most radical advance toward society's moral and physical cure. Beginning with the teaching of normal sex hygiene to little children at the mother's knee, through the medium of the flowers, and soon through the lower and then the higher forms of animal life,—always emphasizing the sacred duty and privilege of reproducing one's kind, and of equipping the body and mind far in advance for this duty,—beginning with this primitive, but essential ground-teaching, we can advance through the public and private school to the later sociologic training of the adult citizen. Not only trained teachers are needed, but intelligently willing parents. We are at least one generation distant from the apparent realization of society's physical and moral cure.

## COMPETENT AND WILLING OFFICIALS.

An intelligent, open-eyed people will elect to positions of responsibility and trust only such men and women as are committed to the moral and physical health of the public. One of the new requirements of eligibility for mayor of a city will be a candidate's thorough acquaintance with the bearing of prostitution on the physical health of the community. He will be required to make in advance an outspoken statement of his attitude toward a continued tolerance of the spread of the social diseases through publicly condoned immorality,—a tolerance that is rendered possible only by the violation of his oath of office in ignoring and failing to enforce existing laws. As a rule these are competent to meet the needs and to insure the protection of the public. Clandestine prostitution furnishes a problem even far more serious than that of public immorality and one that does not come within the responsibility of a city's chief executive. This fact relieves him in no measure from a full and far-reaching responsibility for every public brothel that remains open and inviting to the boys and men contrary to law, or for every case of venereal disease carried from such a house into clean homes to infect innocent, ignorant women and children. In my own as in almost every other city the brothels have long stood open wide. In them a large percentage of our boys and men contract and transmit one or both of the two contagious social diseases. This is in the face of the fact that mayor after mayor has sworn to uphold laws already on the statute-books, and only awaiting official willingness to enforce them.

## WHAT CAN THE PUBLIC DO?

The active co-operation of the people with their chosen officials is the ideal method and will no doubt bring the speediest and most thorough result. The people and the officials are not both essential to the success of an intelligently conscientious endeavor. Either can awaken the other, if slumbering, to a sense of duty and inherent power. Either can accomplish much, if necessary, without the aid of the other. In certain of our American cities the immoral and diseased sections have been rendered temporarily clean through the efforts of one man or of the entire body of citizens, in the face of a reluctant mayor and an openly opposing department of police. In such an event the public may have to seek out the facts for itself. It should, if necessary, deliberately investigate its own improvident expenditure of public funds for the care of those physically incompetent through tolerated public immorality; It should not be called on, however, to assume the functions of the mayor and his

subordinates; but in the delinquency of these officials it may and should take their functions over. The public officials are salaried to protect the public by the enforcement of law. On occasion the public is forced to work and to serve without pay. Publicly condoned prostitution means publicly condoned disease and a consequent civic burden in the form of taxes for the maintenance and care of the feeble-minded, epileptic, orphaned, crippled and paralyzed. It would almost seem that the medical portion of the public would feel it incumbent on itself to render these data easy for the people to obtain. It should encourage a full public understanding of the dependence of these conditions in large measure on immorality and consequent disease.

In default of action by their chosen officials the people should not repeat the mistake of placing unwilling men in places of power. The women of a community should demand also that the double standard of physical and moral health be distinctly condemned by the male sex, if marriage and child-bearing are to be continued by innocent, clean girls. Motherhood should not entail invalidism, the operating-table and an unsexing operation soon after the first child is born. What is more, womankind should see to it that the single standard is adhered to, at least by those men who desire to marry clean girls. No laws are needed for the purpose. Let the mother, or better still the marrying girl, offer her prospective husband a physician's certificate of her own freedom, as far as ascertainable, from transmissible disease, and demand the same from him. His answer will of itself go far toward assuring her of safety or danger. In this step the miracle is already well on its way toward accomplishment, the women and children are in sight of physical safety, and the babies far nearer an enjoyment of their right and title to be born alive and to live.

#### MEASURES TO BE AVOIDED.

The public should also study and acquaint itself with the facts regarding measures that have invariably invited and just as invariably resulted in failure. These may be considered under three heads: (1) indisposition, ignorance, inaction; (2) reglementation, including medical examination, and segregation; (3) vice commissions.

*Inaction* has been the order of the day for centuries, and has centered in male duplicity and willingness to tolerate feminine ignorance and even encourage blind overconfidence in the worthiness of the stronger and less temperate sex. Most cities owe their sorry moral and physical plight to the fact that they are contented in their corruption in spite of knowing that it is only a short step to civic revolution and to the security of a new and real health.

*Reglementation, Medical Examination and Segregation* have all been put to a thorough test in Europe and in certain sections of this country. In Germany, France, Austria, and England government commissions have reported not only on their inefficacy, but very positively with respect to their influence in increasing the spread of prostitution and the social diseases. No more ample, no more definite evidence can be presented to an intelligent people than has been adduced on this point. Nothing further should be necessary by way of determining the action of a wide-awake nation. We should not require the stroke of a mallet on our collective figurative head. Neither should we encourage a further waste of time and money over methods and means that have once and again been tried and found wanting.

*Vice Commissions.* — I venture to suggest that these are at best a sorry attempt on the part of public officials, from the mayor of a city down, to shift a grave personal responsibility and duty on a long-suffering people. Two memorable vice commissions have made the necessary pioneer investigations and have blazed the way. The fact that they were necessary in their respective cities was a burning disgrace on the executive officers of those communities and on the male sex at large. None the less, their work was well done, and their reports have startled all the world except the portions that are still asleep or that do not wish to be shaken out of ignorance and depravity. Cities differ very little with respect to their immoral and diseased sections. Invariably there is a close association between rotten politics and public prostitution. Without a thorough interdependence of these twin evils neither one could continue to exist, because the concealment and misrepresentation that are necessary to the life of the latter would become apparent to the clean portion of the public and action would be prompt and radical.

Every public prostitute and street-walker ought to be accurately known to the police officials. Her exit from a particular city is not a matter of difficulty when this end is desired. A definite notice that she is to cease plying her trade, with the realization that the notice requires attention and observance, is all that is necessary. Nor need she return until the authorities desire or permit her reappearance. When all cities take this matter in hand there will be none that will harbor an acknowledged public woman or house of ill fame, nor one that will permit the presence of soliciting men and women — usually foci of contagious disease — on its streets.

There are indeed difficult phases and perplexing features of the prostitution question, but the matter of a full knowledge of the number and identity of the public houses and of their inmates and of the street-

walkers, and ridding the cities of all these, are not among those difficulties. An official suggestion that they are constitutes an insult to the intelligence of the people, and amounts to a self-conviction of unfitness for executive office. Moreover, we may rest assured that a vice commission, from to-day on, will from the time of its appointment until its dissolution meet with unnatural conditions in the city which it undertakes to investigate. My own city is at this instant heralding far and wide the fact that its vice commission, just appointed, is about to begin its labors and report on the condition of the town. Meanwhile during the three months since the first announcement that the mayor was waiting for a public demand for a vice commission all types of public prostitute, house inmate and street-walker, have been quietly and discreetly filtering out of Philadelphia into Atlantic City, Baltimore, Washington, even New York,—black and white, male and female,—all diseased and transmitting contagious disease, and ready to return to their pursuits shortly after the vice commission has rendered its report on an unnatural and abnormally peaceful state of affairs. In most instances a vice commission must necessarily employ improper and immoral means to obtain the evidence that will convict. When it does not, it assigns to an impossible task a police or detective force that is usually as well known to the public prostitute as the latter is to them. Perhaps, as in the Philadelphia journals of yesterday and to-day, the personnel, even the names of the officers assigned to detective duty are spread out to public, and of course to prostitute, view. Every item of the work of a vice commission can and should be accomplished more thoroughly, quietly and quickly by an efficient police department serving under a loyal mayor and director of public safety than by a group of citizens, however willing, but altogether ignorant of the first principles of such an investigation as is placed in their charge. The facts are in most instances already in hand; the moral courage to use them is alone lacking.

*Official and Departmental Investigation and Control.*—These are the forces that must be invoked and applied sanely, persistently and without ceasing. The moment they are relaxed human passion and carelessness of inevitable results will answer for the return of moral and physical conditions that are all too apparently serious to-day. In my opinion no city need harbor either the public prostitute or his or her contagious disease, provided it begin now and continue electing only such public officers as both subscribe to solemn oaths and fulfil their obligations to the public and to humanity.

The public should square itself with the public prostitute and acknowl-

edge that in a large measure it is responsible for her sorry state. Social conditions are tolerated and encouraged by many of saintly speech and mien that render it easy if not imperative that the public woman yield to the temptations of passion, vanity, and man's disregard of woman's honor and fair name. Starvation wages, the unattractiveness and poverty of the home, the opportunity of an easy income far larger than that obtainable in an honest or honorable livelihood, a total ignorance of the inevitably early disease and death that attend this calling, the dance-hall, the average theatrical show, the wiles of the procurer and cadet, the long working-hours, the temptation and finery of the department store, the lack of legitimate pleasure and relaxation are the conditions that help, at least, in recruiting the ranks of the 300,000 and more of America's public women, the average length of whose prostitute life is little over five years. The public owes the prostitute something of sympathy, protection, encouragement and of hospital care, at least when she emerges from her low level to an attempt at better things. Her head should not be pushed down again; she should not be refused employment; she should not be raided or imprisoned unless the same treatment is accorded the man. She ought to be taken into God's fresh air under institutional protection and directing care, under ideal conditions, until she can breathe deeply and realize that there are human beings still on the earth who have also erred in one or another direction and who are extending to her a helping hand. She has not violated her oath of office as have the mayor and his subordinates who have perhaps allowed her to become morally and physically infected and as a prostitute to spread contagious disease, nor has she yielded in most instances altogether to her own desire. Grim social conditions have oftentimes pressed her down until her weak will has given way in an attempt to reach the only apparent means of relief and escape from intolerable servitude or impending starvation.

Another mistake that is likely to be made is the overlooking by the citizens of the entire absence and lack of hospital provision for the army of girls and women and boys and men whom any wholesale moral upheaval will throw suddenly on the community. In the State of Pennsylvania there is only one hospital that freely admits for treatment persons suffering from the social diseases as such. Without ample hospital facilities and wards in which to furnish treatment free of charge to all willing to apply, the control of the diseases consequent on prostitution is impossible, and the attempt need not be undertaken with any hope of accomplishment. Such extravagances as the recently proposed placarding of the houses of those infected with the social diseases are ill-advised con-

ception of those who are acquainted with neither the social nor the strictly medical difficulties in the way. Victims of syphilis or a gonococcus infection must be encouraged to attempt as speedy and complete a cure as possible, not driven to concealment and the inevitable spread of disease. An exaggerated fear of public exposure means simply and surely an endless chain of infections that will cease only when the social diseases are placed as they should be, in the light of day, beside and in the same category with similar contagions, such as smallpox, typhoid fever and tuberculosis, not one of which compares either in morbidity or indirect mortality with syphilis, or perhaps with gonococcus disease.

#### SALUTARY SANITARY MEASURES.

There are practical measures that are likely to contribute toward final success in the partial or ultimately complete eradication of the social diseases. One of the most important of these is the placing of syphilis and gonococcus disease on the list of the compulsory reportable contagions. California enforces such a provision to manifest advantage. Even New York City provides for limited reporting of these conditions. In no instance is the name of the patient reported to the health authorities; simply the fact (by number) that a new case is in the care of the physician, a brief statement of the character of the infection, its origin when possible, and the adequacy of its supervision and care from the standpoint of the public.

Another strictly official health measure should be the provision for a careful and accurate study of the social diseases. Such an investigation must needs be carried on by the authorities to be complete or of any practical value. It could be rendered successful by the use of a questionnaire placed in the hands of every physician in a given municipality.

Side by side with adequate free treatment for syphilis and gonococcus infection should be offered unrestricted opportunities for obtaining a Wassermann test for syphilis, a serum test for gonococcus infection, or a laboratory examination of specimens and slides for the *Spirocheta pallida* and for gonococci. Quarantine regulations can and should be imposed on patients who refuse proper treatment and thereby endanger the public health.

State control hardly seems practicable at the present time, though both the State and national authorities should officially recognize the social diseases as grave problems from the standpoint of morbidity and of indirect mortality. Especially in their bearing on mortality among infants and children should they be listed as hereditary contagions, and

accurate statistics be sought after. It may be possible within the near future to spread on the statute books laws similar to those already enacted in several of our western States providing for the requirement of a certificate of health prior to the issuance of a license to marry. Such a law would at best be merely an educational power. It cannot be enforced except in so far as the individual physician is conscientious and has an eye single to public duty. This end can be accomplished in even fuller measure by the people themselves when they are of a mind to establish the custom of exacting just such a certificate in the absence of a law covering the point.

Another invaluable measure must be the furnishing by every city of all its hospitals with private and free wards for the decent and skilful treatment of syphilis and gonococcus disease. This has already been referred to as absolutely necessary to success.

Another measure might well be the systematic education of all those who probably carry infection, especially of the public prostitute so long as she is an acknowledged member of a community, with respect to her own invariable infectiousness to the public, not only to the men with whom she cohabits, but through them and also independently of them to other and innocent individuals.

Still another would be the posting in the front hall of every building, respectable and otherwise, of the name and address of the owner of the property. If held in the name of a corporation or estate the name of the latter should be displayed. In Iowa an injunction can be obtained against the keeper of a house of prostitution, as well as against the owner of the property. A fine of \$300 may be imposed by the court against the property, constituting a tax lien which takes precedence over a mortgage and serves as a cloud on the title. The property is enjoined forever from use for immoral purposes and for one year from use for any purpose whatsoever, except under certain specified conditions.

A fifth would be the formation of definite organizations whose sole aim would be the securing of ample living wages for girls and women for services actually rendered. This step would be an active preventive measure against public prostitution, and still more powerful in the control of the even more serious problem of clandestine immorality which serves as the most active means of spreading the social diseases among the needy working girls, and through them to boys and men.

Sixth, the cities can and should maintain a real home, an outdoor institutional guardianship, not in the nature of a penal institution, for wayward girls who need and desire a guiding and directing hand back into physical and moral health. Definite provision should be made for

the protection of the public against infected and infectious cooks and table servers (hotel, restaurant and lunch-counter waiters), colored and white; also for a full medical certification as to the freedom of certain classes of household servants, especially of nursery maids and butlers, from transmissible disease. One of the largest railroad systems in the country is of its own volition already insisting on a regular periodic physical examination by the company's medical officer of its entire restaurant station and train force on pain of prompt dismissal in the event of refusal to submit to the inspection. For identical reasons the common drinking-cup, the roller towel, and the public piece of soap, should be forbidden by law. The cities can and should furnish properly managed outdoor gymnasiums, baths, dance-halls and playgrounds, not only for its children but for its young adult men and women. From both of these uncared-for classes come the substitutes that fill the ever depleting ranks of the diseased and dying prostitute.

Finally, it would not be an impossible thing for the women of a city effectually to demonstrate to the men that since prostitution is no longer looked on as a physical necessity for either sex, it must no longer be indulged in by the loyal citizen. A prompt handling of all attempts to entice and solicit on the part of men; the public exposure and summary punishment of all males and females detected practicing any form of prostitution; the oversight of the moral and physical welfare of its boys and girls, at least to the extent of safeguarding and preventing them from easy contact with prostitution and from exposure to the social diseases in public houses of ill fame,— lie within the power of the large cities and afford opportunities that should not be overlooked of prevention as by all odds the best and cheapest form of cure. The women and the physicians of a community really have the solution of the prostitution problem within their grasp and control. Both prostitution and the social diseases will begin to disappear the moment the women and the physicians so decree. With power comes the responsibility of *noblesse oblige*. With the new opportunity comes also a shame born of oft-repeated unwillingness and refusal. Only through educated, brave men and women and through the intelligent action of him whom we still love to call the family doctor, will that new body of citizens be reared who will know all the facts, and regard prostitution and its diseases as burning life-problems, and who will not stop short of a radical cure of evils for the continuance of which through their inaction they have been in a considerable measure responsible.

**ADDITIONAL REGULATION CONCERNING THE BUSINESS  
OF COLD STORAGE.**

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At a meeting of the State Board of Health held on Nov. 7, 1912, the following additional regulation was made concerning the business of cold storage, in accordance with the provisions of chapter 652 of the Acts of 1912:—

**RULE 2A.**—Articles of food already held in cold storage on September first, nineteen hundred and twelve, shall be legibly marked as follows: "In storage September 1, 1912," or "In storage 9-1-'12." In other respects the marking of such articles shall be governed by the provisions of Rule 2.

**RULES, REGULATIONS AND RECOMMENDATIONS PERTAIN-  
ING TO THE BUSINESS OF SLAUGHTERING AND  
MEAT INSPECTION.**

MADE IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 534 OF THE ACTS OF 1911.

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**SLAUGHTERHOUSES.**

**Sanitation.**—1. It is recommended that local authorities require slaughterhouses to be maintained in a reasonably sanitary condition before issuing licenses for slaughtering purposes.

**Nuisances on Premises.**—2. The keeping of hogs near a slaughterhouse, and the feeding of hogs or other animals on the refuse of slaughterhouses, should not be permitted on the premises of a licensed establishment. All yards, fences, pens, chutes, alleys, etc., belonging to the premises of such establishments, whether used or not, should be maintained in a sanitary condition. No use incompatible with proper sanitation should be made of any part of the premises on which such establishment is located.

**Slaughterhouses.**—3. All slaughterhouses are under the supervision of the State Board of Health, and are subject to inspection at any time; but actual control of sanitary conditions lies largely in the hands of the local authorities.

**INSPECTORS, DUTIES OF, ETC.**

**Inspectors.**—The inspector of slaughtering is to be nominated annually in March by the boards of health of cities (except Boston) and towns, said nomination to be approved by the State Board of Health.

In all cities at least one of the inspectors of slaughtering shall be a registered veterinary surgeon.

**Duties of Inspectors.**—Inspectors must be present at all licensed slaughterhouses or establishments upon the days specified for slaughter on the application for license, and there carefully examine the carcasses of all animals at the time of slaughter.

**Reports.**—Inspectors shall make returns to the State Board of Health on or before the twenty-fifth day of January, April, July and October of each year, and shall state all inspections made by them during the three months preceding the first day of the said months.

**Ante-mortem Inspection.**—It is recommended that an ante-mortem examination and inspection be made of all cattle, sheep and swine before they are slaughtered. All animals suspected of being affected with any disease or condition liable to render the meat unfit for human food should receive especially thorough inspection at time of slaughter.

#### USE OF STAMP AND TAGS.

**“Massachusetts Inspected and Passed.”**—1. The “Massachusetts Inspected and Passed” stamp, when applied to a carcass, or any part thereof, signifies that the carcasses, meats and meat products have been inspected and passed for food under these regulations. Carcasses passing inspection should be branded as follows:—

Each side of beef, nine times, eight on the outside and one on the inside:—

Once on outside of neck.

Once on shoulder.

Once on shank.

Once on brisket.

Once on loin.

Once on flank.

Once on round.

Once on cod.

On inside, once on fat over kidney.

Each side of veal, twice:—

Once on outside of each quarter.

Each carcass of swine, three times:—

Once on head between ears.

Once on inside of each foreleg near body.

Each carcass of sheep or lamb, twice:—

Once on loin.

Once on croup.

**"Massachusetts Inspected and Condemned."** — 2. A condemnation tag is to be attached to any carcass, parts of carcass, meats or organs found to be unsound, unhealthful, unwholesome or otherwise unfit for human food, and the parts or organs so tagged shall be disposed of by rendering, or otherwise so treated that they cannot be used for human food.

**In the Absence of Tanking Facilities.** — 3. Any meat or meat products condemned at slaughterhouses which have no facilities for tanking should be freely slashed with a knife and then denatured with crude carbolic acid, kerosene or other prescribed agent, and then removed to a rendering establishment or otherwise disposed of by burial, etc.

#### INTERPRETATION AND DEFINITION OF WORDS AND TERMS.

**Carcass.** — 1. This word shall apply to all parts of the animal intended to be used for food.

**Sound Carcass.** — 2. Carcasses and parts thereof found to be sound, healthful, wholesome and fit for human food shall be passed and marked as provided in these regulations.

**Unsound Carcass.** — 3. Should any lesion of disease or other condition that would render the meat or any organ unfit for food be found on post-mortem examination, the carcass, part or organ shall be marked immediately with a tag labelled "Massachusetts Condemned."

**Soiled Meat.** — 4. Due care should be taken to prevent meat and meat products from falling on the floor; and in the event of their having fallen, they should be condemned, or the soiled portions removed and condemned.

**Primal Parts of Carcasses.** — 5. This phrase shall mean the usual sections or cuts of the dressed carcass commonly known in the trade, such as sides, quarters, shoulders, hams, backs, bellies, etc., and beef tongues, beef livers and beef tails, before they have been cut, shredded or otherwise subdivided preliminary to use in the manufacture of meat food products.

#### DISPOSAL OF DISEASED CARCASSES.

**Disposal of Diseased Carcasses and Organs.** — The carcasses or parts of carcasses of all animals slaughtered, and found to be affected with any of the diseases or conditions named below, shall be disposed of in a manner prescribed for each disease or condition: —

**Vaccine Animals.** — 1. Vaccine animals with unhealed lesions accompanied by fever, provided they have not been exposed to any infectious or contagious disease, may be used for lard or tallow; otherwise they shall be condemned.

**Immature Veal.** — 2. A careful inspection shall be made of all calves at the time of slaughter. Any calf less than four weeks old and weighing

less than 40 pounds when dressed, with head, feet, hide and entrails removed, shall not be stamped, as the sale of such carcasses is unlawful and prohibited. Carcasses of animals too immature to produce wholesome meat, and all unborn and stillborn animals, shall be condemned.

**Anthrax or Charbon.**—3. All carcasses showing lesions of anthrax or charbon, regardless of the extent of the disease, and including the hide, hoofs, horns, viscera, fat, blood and all other portions of the animal, shall be condemned and immediately incinerated, and the facts reported at once to the State Board of Health and to the Massachusetts Department of Animal Industry.

**Blackleg.**—4. Carcasses of animals showing lesions of blackleg shall be condemned.

**Hemorrhagic Septicemia.**—5. Carcasses of animals affected with hemorrhagic septicemia shall be condemned.

**Pyemia and Septicemia.**—6. Carcasses showing lesions of pyemia or septicemia shall be condemned.

**Rabies.**—7. Carcasses of animals which showed symptoms of rabies before slaughter shall be condemned.

**Tetanus.**—8. Carcasses of animals which showed symptoms of tetanus before slaughter shall be condemned.

**Malignant Epizoötic Catarrh.**—9. Carcasses of animals affected with malignant epizoötic catarrh, showing generalized inflammation of the mucous membrane, shall be condemned.

**Hog Cholera and Swine Plague.**—10. Carcasses showing well-marked lesions of hog cholera or swine plague in more than two of the organs (skin, kidneys, bones, lymphatic glands) shall be condemned.

Provided they are well nourished, carcasses showing slight and limited lesions of these diseases may be passed.

Carcasses showing lesions of these diseases so numerous and advanced as to prohibit their being passed, but not sufficient to cause condemnation, may be rendered into lard by cooking by steam for four hours at 220° F.

In inspecting carcasses showing lesions of hog cholera or swine plague in the skin, bones, kidneys or lymphatic glands, due consideration should be given to the extent and severity of the lesions in the viscera.

**Actinomycosis or Lumpy Jaw.**—11. If a carcass affected with actinomycosis or lumpy jaw is in a well-nourished condition, and the lesions are confined to the head or tongue, the carcass may be passed, but the head and tongue shall be condemned.

Carcasses of animals showing generalized actinomycosis shall be condemned.

**Caseous Lymphadenitis.**—12. When the lesions of caseous lymphadenitis (cheesy lymph glands) are limited to the superficial glands, or a

few nodules in an organ, the meat may be passed. If extensive lesions are found in the lungs or plurae, or any of the visceral organs, and the carcass is emaciated, it shall be condemned.

**Tuberculosis.** — 13. The following principles are advised for guidance in passing on carcasses affected with tuberculosis:—

**Fundamental Thought.** — *Principle A.* The fundamental thought is that meat should not be used for food if it contains tubercle bacilli, if there is a reasonable possibility that it may contain tubercle bacilli, or if it is impregnated with toxic substances of tuberculosis or septic infections.

**Lesions localized and not numerous.** — *Principle B.* If the lesions are localized and not numerous, if there is no evidence of tubercle bacilli in the blood, muscles or parts that may be eaten, and the carcass is well nourished, there is no proof that the flesh is unwholesome, the carcass may, therefore, be passed.

**Generalized Tuberculosis.** — *Principle C.* Evidences of generalized tuberculosis are to be sought in such distribution and number of tubercular lesions as can be explained only upon the supposition that tubercle bacilli are in the systematic circulation. Such lesions will be found in both lungs, spleen, kidneys, bones, joints, sexual glands, lymphatic glands, or in the splenic, renal, prescapular, popliteal and inguinal glands. When several of these organs or parts are coincidentally affected, the carcasses showing these lesions shall be condemned.

**Localized Tuberculosis.** — *Principle D.* By localized tuberculosis is understood tuberculosis limited to a single or several parts or organs of a body without evidence of bacilli invasion of the systematic circulation.

**Rules for Disposal of Tuberculous Meat.** — *Rule A.* (a) When a tuberculous animal shows symptoms of the disease with fever, before it was killed, the carcass shall be condemned.

(b) When the animal shows tuberculosis by symptoms of anemia and emaciation, the carcass shall be condemned.

(c) When the lesions of tuberculosis are generalized as follows: when tuberculosis lesions are found in any two organs of the digestive or respiratory tracts, including the lymphatic glands, spleen, kidney, uterus, udder, ovary, testicle, adrenal gland, brain or spinal cord,— such carcass shall be condemned.

(d) When the lesions of tuberculosis are found in the muscles, bones or joints, or in the body of lymphatic glands as a result of draining the muscles, bones and joints, the carcass shall be condemned.

(e) When the lesions are extensive in one or both body cavities, the carcass shall be condemned.

(f) When the lesions are multiple, acute and actively progressive, the carcass shall be condemned.

**Parts of Carcass condemned.** — *Rule B.* An organ or part of a carcass shall be condemned (a) When it contains lesions of tuberculosis.

(b) When the lesion is adjacent to the flesh.

(c) When contaminated by tuberculous material through contact with the floor, soiled knife or otherwise.

(d) All heads showing lesions of tuberculosis shall be condemned.

(e) An organ shall be condemned when the corresponding lymphatic gland is tuberculous.

**Carcass passed.** — *Rule C.* The carcass, if the tuberculous lesions are limited to a single part or organ, shall be passed after the parts containing the local lesions are removed and condemned.

**Texas Fever.** — 14. Carcasses showing lesions sufficient to warrant the diagnosis of Texas fever shall be condemned.

**Mange or Scab.** — 15. Carcasses of animals affected with mange or scab in advanced stages, or showing emaciation or extension of the inflammation to the flesh, shall be condemned. When the disease is slight the carcass may be passed.

**Tapeworm Cysts.** — 16. Carcasses of animals affected with tapeworm cysts should be rendered into lard or tallow. When the infestation is extensive the carcass shall be condemned.

Carcasses of animals affected with gid bladderworms may be passed after condemnation of the infected organ (brain, spinal cord).

Carcasses or parts of carcasses infested with the hydatid cyst may be passed after condemnation of the affected part or organ.

All carcasses showing lesions of the following contagious diseases shall be reported at once to the Massachusetts Department of Animal Industry: "Contagious diseases, under the provisions of this chapter, shall include glanders, farcy, mange, contagious pleuro-pneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, rabies, anthrax or anthracoid diseases, sheep scab and actinomycosis." (See section 28 of chapter 90 of the Revised Laws, as amended by section 1 of chapter 6, Acts of 1911.)

#### INFECTIONS THAT MAY CAUSE MEAT POISONING.

Carcasses of animals so infected that consumption of the meat or meat food products may give rise to meat poisoning shall be condemned. This section covers all carcasses showing signs of:—

(a) Acute inflammation of the lungs, pluræ, peritoneum, pericardium or meninges.

(b) Septicemia or pyemia, whether puerperal or traumatic.

(c) Severe hemorrhagic or gangrenous enteritis or gastritis.

(d) Acute diffuse metritis or mammitis (garget).

- (e) Polyarthritis (inflammation of joints).
- (f) Phlebitis of umbilical veins.
- (g) Traumatic pericarditis.

**Icterus.** — Carcasses affected with icterus (jaundice), and showing an intense yellow or greenish yellow discoloration after proper cooling, shall be condemned. If such a discoloration passes away during cooling, the carcasses may be passed.

**Uremia and Sexual Odor.** — Carcasses giving off such odors shall be condemned.

**Urticaria, etc.** — Hogs affected with urticaria (diamond skin disease) may be passed after condemning the skin, provided the carcass is otherwise fit for food.

**Tumors, Bruises, Abscesses, etc.** — Any organ or part of a carcass which is badly bruised, or is affected by tumors, malignant or benign abscesses, suppurating sores or liver flukes, shall be condemned. When the lesions affect the whole carcass, the entire carcass shall be condemned.

**Emaciation and Anemia.** — Carcasses of animals too emaciated or anemic to produce wholesome meat, and carcasses showing slimy degeneration of the fat, or a serous infiltration of the muscles, shall be condemned.

**Milk Fever, Railroad Sickness.** — Carcasses of animals showing symptoms of milk fever or railroad sickness at the time of slaughter shall be condemned, as the flesh of such animals is dark in color and more watery than is natural, suggesting autointoxication.

New Series.

DECEMBER, 1912.

Vol. 7. No. 12.

# MONTHLY BULLETIN



OF THE  
STATE BOARD OF HEALTH  
OF  
MASSACHUSETTS.

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1912.

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APPROVED BY  
THE STATE BOARD OF PUBLICATION.

**WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS  
OF MORE THAN 10,000 POPULATION.**

WEEK ENDING DEC. 7, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	Total Infectious Diseases reported.	DEATHS FROM —							
					Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Mumps.	Whooping Cough.
Boston, .	686,092	242	65	78	41	17	4	—	—	—	—	4
Worcester, .	145,986	44	6	12	9	—	—	—	—	—	—	—
Fall River, .	119,295	29	6	12	4	3	—	—	—	—	—	—
Lowell, .	106,294	34	11	7	—	7	—	—	—	—	—	—
Cambridge, .	104,839	27	6	14	6	7	—	—	—	—	—	—
New Bedford, .	96,652	27	6	10	—	2	—	—	—	—	—	—
Lynn, .	89,336	25	3	3	—	—	—	—	—	—	—	—
Springfield, .	88,926	14	3	4	2	—	—	—	—	—	—	—
Lawrence, .	85,892	—	—	—	—	—	—	—	—	—	—	—
Somerville, .	77,236	20	4	4	4	—	—	—	—	—	—	—
Holyoke, .	57,730	20	6	4	1	—	—	—	—	—	—	—
Brockton, .	56,878	8	1	1	—	—	—	—	—	—	—	—
Malden, .	44,404	12	2	4	2	—	—	—	—	—	—	—
Haverhill, .	44,115	13	1	3	2	—	—	—	—	—	—	—
Salem, .	43,697	11	2	4	4	—	—	—	—	—	—	—
Newton, .	39,806	6	—	3	2	—	—	—	—	—	—	—
Fitchburg, .	37,826	9	1	2	2	—	—	—	—	—	—	—
Taunton, .	34,259	13	1	2	1	—	—	—	—	—	—	—
Everett, .	33,484	9	3	1	—	—	—	—	—	—	—	—
Quincy, .	32,642	—	—	—	—	—	—	—	—	—	—	—
Chelsea, .	32,452	12	1	3	2	—	—	—	—	—	—	—
Pittsfield, .	32,121	18	5	6	3	—	—	—	—	—	—	—
Waltham, .	27,884	7	2	4	3	—	—	—	—	—	—	—
Brookline, .	27,792	6	—	—	—	—	—	—	—	—	—	—
Chicopee, .	25,401	4	1	2	1	—	—	—	—	—	—	—
Gloucester, .	24,398	5	2	2	2	—	—	—	—	—	—	—
Medford, .	23,150	6	—	—	—	—	—	—	—	—	—	—
North Adams, .	22,019	5	—	1	—	—	—	—	—	—	—	—
Northampton, .	19,431	7	1	3	2	—	—	—	—	—	—	—
Beverly, .	18,650	3	—	—	—	—	—	—	—	—	—	—
Revere, .	18,219	1	1	—	—	—	—	—	—	—	—	—
Leominster, .	17,580	4	—	1	1	—	—	—	—	—	—	—
Attleborough, .	16,215	5	1	1	—	—	—	—	—	—	—	—
Westfield, .	16,044	2	1	—	—	—	—	—	—	—	—	—
Peabody, .	15,721	—	—	—	—	—	—	—	—	—	—	—
Melrose, .	15,715	6	2	2	1	—	—	—	—	—	—	—
Woburn, .	15,308	4	—	1	1	—	—	—	—	—	—	—
Newburyport, .	14,949	8	—	1	—	—	—	—	—	—	—	—
Gardner, .	14,699	6	1	—	—	—	—	—	—	—	—	—
Marlborough, .	14,579	2	—	1	—	—	—	—	—	—	—	—
Clinton, .	13,075	1	—	—	—	—	—	—	—	—	—	—
Milford, .	13,055	—	—	—	—	—	—	—	—	—	—	—
Adams, .	13,026	10	3	—	—	—	—	—	—	—	—	—
Framingham, .	12,948	3	1	1	1	—	—	—	—	—	—	—
Weymouth, .	12,895	—	—	—	—	—	—	—	—	—	—	—
Watertown, .	12,875	4	2	2	2	—	—	—	—	—	—	—
Southbridge, .	12,592	2	—	—	—	—	—	—	—	—	—	—
Plymouth, .	12,141	2	1	—	1	—	—	—	—	—	—	—
Webster, .	11,509	6	2	—	—	—	—	—	—	—	—	—
Methuen, .	11,448	—	—	—	—	—	—	—	—	—	—	—
Wakefield, .	11,404	2	—	1	—	—	—	—	—	—	—	—
Arlington, .	11,187	5	2	2	1	—	—	—	—	—	—	—
Greenfield, .	10,427	3	—	—	1	—	—	—	—	—	—	—
Winthrop, .	10,132	2	—	1	1	—	—	—	—	—	—	—

*Recapitulation.*

Total of reporting towns, .	2,434,727	714	156	204	114	48	4	6	3	2	3	4
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WEEK ENDING Dec. 14, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	Total Infectious Diseases reported.	DEATHS FROM —							
					Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	193	36	75	34	20	6	4	1	1	2	1
Worcester, .	145,986	43	7	12	8	3	1	-	-	-	-	-
Fall River, .	119,295	43	12	15	6	5	3	-	-	-	-	-
Lowell, .	106,294	43	7	16	6	3	3	-	-	-	-	-
Cambridge, .	104,839	20	2	11	6	3	1	-	-	-	-	-
New Bedford, .	96,652	27	9	12	6	3	1	-	-	-	-	-
Lynn, .	89,336	23	2	4	4	1	1	-	-	-	-	-
Springfield, .	88,926	41	4	9	4	1	1	-	-	-	-	-
Lawrence, .	85,892	-	-	-	-	-	-	-	-	-	-	-
Somerville, .	77,236	18	6	4	1	2	1	-	-	-	-	-
Holyoke, .	57,730	25	8	13	2	1	1	-	-	-	-	-
Brockton, .	56,878	16	3	5	3	1	1	-	-	-	-	-
Malden, .	44,404	9	5	1	1	1	1	-	-	-	-	-
Haverhill, .	44,115	-	3	3	3	1	1	-	-	-	-	-
Salem, .	43,697	10	2	2	2	1	1	-	-	-	-	-
Newton, .	39,806	21	3	3	3	1	1	-	-	-	-	-
Fitchburg, .	37,826	6	1	1	1	1	1	-	-	-	-	-
Taunton, .	34,259	18	3	6	2	2	3	-	-	-	-	-
Everett, .	33,484	8	2	1	1	1	1	-	-	-	-	-
Quincy, .	32,642	-	3	1	1	1	1	-	-	-	-	-
Chelsea, .	32,452	7	3	1	1	1	1	-	-	-	-	-
Pittsfield, .	32,121	12	4	4	1	1	3	-	-	-	-	-
Waltham, .	27,834	14	3	4	4	1	1	-	-	-	-	-
Brookline, .	27,792	9	1	1	1	1	1	-	-	-	-	-
Chicopee, .	25,401	10	5	2	2	1	1	-	-	-	-	-
Gloucester, .	24,398	3	2	1	1	1	1	-	-	-	-	-
Medford, .	23,150	6	1	1	1	1	1	-	-	-	-	-
North Adams, .	22,019	10	3	3	2	1	2	-	-	-	-	-
Northampton, .	19,431	8	3	1	1	1	1	-	-	-	-	-
Beverly, .	18,650	5	-	-	-	-	-	-	-	-	-	-
Revere, .	18,219	4	-	-	-	-	-	-	-	-	-	-
Leominster, .	17,580	2	-	-	-	-	-	-	-	-	-	-
Attleborough, .	16,215	-	-	-	-	-	-	-	-	-	-	-
Westfield, .	16,044	6	-	-	-	-	-	-	-	-	-	-
Peabody, .	15,721	-	-	-	-	-	-	-	-	-	-	-
Melrose, .	15,715	2	-	-	-	-	-	-	-	-	-	-
Woburn, .	15,308	5	-	-	-	-	-	-	-	-	-	-
Newburyport, .	14,949	3	-	-	-	-	-	-	-	-	-	-
Gardiner, .	14,699	8	1	1	1	1	1	-	-	-	-	-
Marlborough, .	14,579	6	2	1	1	1	1	-	-	-	-	-
Clinton, .	13,075	2	1	1	1	1	1	-	-	-	-	-
Milford, .	13,055	-	-	-	-	-	-	-	-	-	-	-
Adams, .	13,026	1	-	-	-	-	-	-	-	-	-	-
Framingham, .	12,948	2	-	-	-	-	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	3	1	1	-	-	-	-	-	-	-	-
Southbridge, .	12,592	1	1	-	-	-	-	-	-	-	-	-
Plymouth, .	12,141	1	-	-	-	-	-	-	-	-	-	-
Webster, .	11,509	4	1	1	-	-	-	-	-	-	-	-
Methuen, .	11,448	-	1	1	-	-	-	-	-	-	-	-
Wakefield, .	11,404	1	-	-	-	-	-	-	-	-	-	-
Arlington, .	11,187	1	-	-	-	-	-	-	-	-	-	-
Greenfield, .	10,427	1	-	-	-	-	-	-	-	-	-	-
Winthrop, .	10,132	-	-	-	-	-	-	-	-	-	-	-

*Recapitulation.*

Total of reporting towns, .	2,408,380	701	143	223	107	60	11	13	5	3	3	1
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WEEK ENDING DEC. 21, 1912.

CITIES AND TOWNS.	Population, Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	Total Infectious Diseases reported.	DEATHS FROM									
					Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.		
Boston, .	686,092	244	57	93	37	28	4	4	2	2	10	2		
Worcester, .	145,986	48	6	18	12	4	1	1	-	1	1	1		
Fall River, .	119,295	36	18	21	9	3	3	2	-	2	2	2		
Lowell, .	106,294	48	16	20	5	4	3	2	-	1	1	1		
Cambridge, .	104,839	27	9	13	6	3	3	1	-	1	1	1		
New Bedford, .	96,652	27	3	10	3	3	3	1	-	1	1	1		
Lynn, .	89,336	19	4	3	5	3	3	1	-	1	1	1		
Springfield, .	88,926	24	9	10	5	3	3	1	-	1	1	1		
Lawrence, .	85,892	-	-	-	7	2	2	1	-	1	1	1		
Somerville, .	77,236	21	4	11	3	3	3	1	-	1	1	1		
Holyoke, .	57,730	16	6	7	4	3	3	1	-	1	1	1		
Brockton, .	56,878	17	4	4	4	3	3	1	-	1	1	1		
Malden, .	44,404	16	4	11	3	3	3	1	-	1	1	1		
Haverhill, .	44,115	12	-	2	1	1	1	1	-	1	1	1		
Salem, .	43,697	17	3	4	4	3	3	1	-	1	1	1		
Newton, .	39,806	9	-	4	4	3	3	1	-	1	1	1		
Fitchburg, .	37,826	11	3	1	1	1	1	1	-	1	1	1		
Taunton, .	34,259	10	1	3	1	1	1	1	-	1	1	1		
Everett, .	33,484	3	1	1	1	1	1	1	-	1	1	1		
Quincy, .	32,642	-	-	-	-	-	-	-	-	-	-	-		
Chelsea, .	32,452	5	1	1	1	1	1	1	-	1	1	1		
Pittsfield, .	32,121	10	2	7	5	5	5	1	-	1	1	1		
Waltham, .	27,834	13	2	1	1	1	1	1	-	1	1	1		
Brookline, .	27,792	8	-	1	1	1	1	1	-	1	1	1		
Chicopee, .	25,401	6	2	1	1	1	1	1	-	1	1	1		
Gloucester, .	24,398	11	-	2	2	2	2	1	-	1	1	1		
Medford, .	23,150	8	2	3	3	2	2	1	-	1	1	1		
North Adams, .	22,019	8	1	1	1	1	1	1	-	1	1	1		
Northampton, .	19,431	7	-	2	2	2	2	1	-	1	1	1		
Beverly, .	18,650	1	1	1	1	1	1	1	-	1	1	1		
Revere, .	18,219	3	-	1	3	2	2	1	-	1	1	1		
Leominster, .	17,580	5	1	3	2	2	2	1	-	1	1	1		
Attleborough, .	16,215	4	-	1	1	1	1	1	-	1	1	1		
Westfield, .	16,044	6	1	1	1	1	1	1	-	1	1	1		
Peabody, .	15,721	4	2	1	1	1	1	1	-	1	1	1		
Melrose, .	15,715	5	-	1	1	1	1	1	-	1	1	1		
Woburn, .	15,308	3	2	2	1	1	1	1	-	1	1	1		
Newburyport, .	14,949	4	-	2	1	1	1	1	-	1	1	1		
Gardner, .	14,699	3	-	2	1	1	1	1	-	1	1	1		
Marlborough, .	14,579	7	1	2	2	2	2	1	-	1	1	1		
Clinton, .	13,075	5	1	1	1	1	1	1	-	1	1	1		
Milford, .	13,055	-	-	-	-	-	-	-	-	-	-	-		
Adams, .	13,026	2	-	-	-	-	-	-	-	-	-	-		
Framingham, .	12,948	3	2	-	-	-	-	-	-	-	-	-		
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-	-		
Watertown, .	12,875	1	1	1	1	1	1	1	-	1	1	1		
Southbridge, .	12,592	2	1	1	1	1	1	1	-	1	1	1		
Plymouth, .	12,141	4	-	-	-	-	-	-	-	-	-	-		
Webster, .	11,509	3	2	1	1	1	1	1	-	1	1	1		
Methuen, .	11,448	-	-	-	-	-	-	-	-	-	-	-		
Wakefield, .	11,404	6	-	-	-	-	-	-	-	-	-	-		
Arlington, .	11,187	2	-	-	-	-	-	-	-	-	-	-		
Greenfield, .	10,427	-	-	-	-	-	-	-	-	-	-	-		
Winthrop, .	10,132	2	1	-	-	-	-	-	-	-	-	-		

## Recapitulation.

Total of reporting towns, .	2,440,021	756	176	272	139	61	8	12	5	7	13	4
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WEEK ENDING DEC. 28, 1912.

CITIES AND TOWNS.	Population. Census for 1910.	Reported Deaths in Each.	Deaths under Five Years.	Total Infectious Diseases reported.	DEATHS FROM —							
					Acute Lung Diseases.	Tuberculosis, Pulmonary (or not classified).	Tuberculosis, other than Pulmonary.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Whooping Cough.
Boston, .	686,092	224	57	75	36	14	2	6	-	-	9	1
Worcester, .	145,986	54	6	15	38	6	1	2	1	1	-	-
Fall River, .	119,295	34	13	17	13	-	-	2	2	1	-	-
Lowell, .	106,294	50	18	13	8	2	1	1	1	1	-	-
Cambridge, .	104,839	34	5	17	9	6	-	1	1	1	-	-
New Bedford, .	96,652	24	9	10	9	-	-	1	1	1	-	-
Lynn, .	89,336	19	3	3	3	-	-	1	1	1	-	-
Springfield, .	88,926	30	6	10	4	3	-	2	1	1	-	-
Lawrence, .	85,892	-	-	-	4	-	-	-	-	-	-	-
Somerville, .	77,236	21	2	7	5	2	-	-	-	-	-	-
Holyoke, .	57,730	17	6	12	4	4	-	2	1	1	-	-
Brockton, .	56,878	2	1	-	2	-	-	1	1	1	-	-
Malden, .	44,404	13	-	6	5	1	-	-	-	-	-	-
Haverhill, .	44,115	18	3	5	2	-	-	-	-	-	-	-
Salem, .	43,697	8	3	1	3	1	-	1	1	1	-	-
Newton, .	39,806	14	-	5	2	-	-	1	1	1	-	-
Fitchburg, .	37,826	7	2	3	2	-	-	1	1	1	-	-
Taunton, .	34,259	15	3	6	4	1	-	-	-	-	-	-
Everett, .	33,484	4	2	2	2	-	-	-	-	-	-	-
Quincy, .	32,642	-	-	-	2	-	-	-	-	-	-	-
Chelsea, .	32,452	15	2	4	3	-	-	-	-	-	-	-
Pittsfield, .	32,121	13	-	5	5	-	-	-	-	-	-	-
Waltham, .	27,834	3	1	2	2	1	-	1	1	1	-	-
Brookline, .	27,792	7	-	3	1	-	-	-	-	-	-	-
Chicopee, .	25,401	7	4	3	2	-	-	-	-	-	-	-
Gloucester, .	24,398	7	1	1	1	-	-	-	-	-	-	-
Medford, .	23,150	1	-	-	1	-	-	-	-	-	-	-
North Adams, .	22,019	9	3	3	2	2	1	1	1	1	-	-
Northampton, .	19,431	12	1	2	1	1	1	1	1	1	-	-
Beverly, .	18,650	3	-	1	1	1	1	1	1	1	-	-
Revere, .	18,219	7	1	2	1	1	1	1	1	1	-	-
Leominster, .	17,580	5	1	1	1	1	1	1	1	1	-	-
Attleborough, .	16,215	15	4	5	1	1	1	1	1	1	-	-
Westfield, .	16,044	3	1	2	1	1	1	1	1	1	-	-
Peabody, .	15,721	-	-	-	-	-	-	-	-	-	-	-
Melrose, .	15,715	2	1	-	-	-	-	-	-	-	-	-
Woburn, .	15,308	6	1	1	1	-	-	-	-	-	-	-
Newburyport, .	14,949	3	1	1	1	1	-	-	-	-	-	-
Gardner, .	14,699	6	-	2	1	1	1	1	1	1	-	-
Marlborough, .	14,579	2	-	-	-	-	-	-	-	-	-	-
Clinton, .	13,075	3	-	-	-	-	-	-	-	-	-	-
Milford, .	13,055	2	1	-	-	-	-	-	-	-	-	-
Adams, .	13,026	2	-	-	-	-	-	-	-	-	-	-
Framingham, .	12,948	5	-	1	1	1	-	-	-	-	-	-
Weymouth, .	12,895	-	-	-	-	-	-	-	-	-	-	-
Watertown, .	12,875	6	1	2	1	-	-	-	-	-	-	-
Southbridge, .	12,592	2	2	-	-	-	-	-	-	-	-	-
Plymouth, .	12,141	2	1	1	1	-	-	-	-	-	-	-
Webster, .	11,509	7	3	4	3	1	-	-	-	-	-	-
Methuen, .	11,448	-	-	-	-	-	-	-	-	-	-	-
Wakefield, .	11,404	1	-	1	1	1	-	-	-	-	-	-
Arlington, .	11,187	5	-	-	3	3	-	-	-	-	-	-
Greenfield, .	10,427	6	-	-	-	-	-	-	-	-	-	-
Winthrop, .	10,132	4	-	-	-	-	-	-	-	-	-	-

*Recapitulation.*

Total of reporting towns, .	2,434,727	757	176	256	147	50	4	18	5	4	11	1
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DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN  
ABOVE TABLES DURING THE WEEKS OF DEC. 7, 14, 21 AND 28, 1912.

DISEASE.	Place.	WEEK ENDING —			
		Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.
Diarrhoeal diseases, . . .	Boston, . . .	5	3	2	4
	Worcester, . . .	1	—	—	—
	Fall River, . . .	4	4	6	1
	Lowell, . . .	—	1	—	—
	Cambridge, . . .	—	1	2	—
	New Bedford, . . .	—	3	—	—
	Springfield, . . .	1	1	—	—
	Holyoke, . . .	1	1	2	1
	Haverhill, . . .	—	—	—	1
	Taunton, . . .	—	—	1	—
	North Adams, . . .	—	1	—	—
	Attleborough, . . .	—	—	—	2
	Plymouth, . . .	—	—	—	1
Cerebro-spinal meningitis,	Boston, . . .	—	—	1	1
	Worcester, . . .	1	—	1	—
	Malden, . . .	—	—	1	—
	Chelsea, . . .	—	—	—	1
	Pittsfield, . . .	1	—	—	—
Meningitis (other than cerebro-spinal), . . . .	Wakefield, . . .	1	—	—	—
Erysipelas, . . . .	Boston, . . .	—	—	1	—
	Fall River, . . .	1	1	—	—
	Taunton, . . .	1	—	—	—
Influenza, . . . .	Boston, . . .	—	—	1	1
	Fall River, . . .	—	—	1	—
	Holyoke, . . .	—	—	—	1
	Malden, . . .	—	—	4	—
	Haverhill, . . .	—	1	—	—
	Taunton, . . .	—	1	—	—
	Attleborough, . . .	—	—	—	1
Puerperal fever . . .	Watertown, . . .	—	—	—	1
	Boston, . . .	3	1	—	—
	Worcester, . . .	—	—	1	—
	Fall River, . . .	—	1	—	—

**WEEKLY RETURNS OF DISEASES DECLARED BY THE STATE  
BOARD OF HEALTH TO BE DANGEROUS TO THE PUBLIC  
HEALTH.**

**CASES REPORTED DURING THE WEEKS OF  
DEC. 7, 14, 21 AND 28, 1912.**

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—				
	Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.	Total.
Diphtheria,	160	155	131	138	584
Measles,	443	465	488	482	1,878
Scarlet fever,	194	398	262	149	1,003
Typhoid fever,	40	27	34	22	123
Tuberculosis, pulmonary (or not classified),	169	107	155	107	538
Tuberculosis, other than pulmonary,	8	10	9	6	33
Cerebro-spinal meningitis,	4	2	3	3	12
Whooping cough,	59	52	39	31	181
Varicella,	125	129	108	75	437
Ophthalmia neonatorum,	38	34	44	29	145
Anterior poliomyelitis,	—	—	1	—	1
Smallpox,	—	—	1	1	2
Trachoma,	—	1	3	3	7
Tetanus,	1	—	1	—	2
Trichinosis,	1	—	—	—	1

**CASES OF INFECTIOUS DISEASES NOT INCLUDED IN THE ABOVE TABLE  
REPORTED DURING THE WEEKS OF DEC. 7, 14, 21 AND 28, 1912.**

[Cases not notifiable under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING—				
	Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.	Total.
Mumps,	7	17	18	9	51
Malaria,	1	—	—	—	1
Impetigo contagiosa,	—	—	1	1	2

## MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of December, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder, .	1	—	1	Meat products:—			
Butter, . . .	1	—	1	Canned meats,	8	—	8
Cider, . . .	5	—	5	H a m b u r g			
Condensed milk, .	4	—	4	steak, . . .	3	—	3
Confectionery, .	3	—	3	Mince meat, . . .	3	—	3
Cream, . . .	7	1	8	Sausages, . . .	4	—	4
Cream of tartar, .	2	—	2	Milk, . . .	365	34	399
Drugs, . . .	47	16	63	Olive oil, . . .	2	—	2
Eggs, . . .	23	1	24	Oysters, . . .	1	—	1
Flavoring extracts:—				Pickles, . . .	4	2	6
Lemon, . . .	2	—	2	Rice, . . .	1	—	1
Vanilla, . . .	3	—	3	Shrimp, . . .	1	—	1
Honey, . . .	2	—	2	Spices, . . .	8	—	8
Jams and jellies,	4	—	4	Table sauce, . . .	2	—	2
Maple sugar, . . .	2	—	2				
Maple syrup, . . .	1	—	1	Total, . . .	509	54	563

The samples of drugs found to be adulterated were alcohol, bromide of potassium, quinine pills, sweet spirit of nitre, spirit of anise and precipitated sulphur.

The cities and towns in which samples were collected were: Arlington, Athol, Attleborough, Boston, Brookline, Cambridge, Clinton, Concord, Dedham, Everett, Fall River, Framingham, Gloucester, Hudson, Leominster, Lowell, Lynn, Medford, Malden, Melrose, Milford, Newburyport, Newton, Orange, Quincy, Reading, Somerville, Taunton, Waltham, Ware, Watertown.

**MONTHLY REPORT OF LABORATORY EXAMINATIONS OF  
FOOD HELD IN COLD STORAGE FOR MORE THAN ONE  
YEAR.**

The following summary presents the results of the laboratory examination of cold-storage goods made by the State Board of Health during the month of December, 1912:—

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Beef, . . .	1	-	1	Sand peep, . . .	2	-	2
Chickens, . . .	1	1	2	Squid, . . .	1	-	1
Fowl, . . .	1	-	1	Turkeys, . . .	2	-	2
Mutton chops,	3	-	3	Venison, . . .	1	-	1
Pigeons, . . .	4	-	4				
Pollock, . . .	1	-	1	Total, . . .	17	1	18

**PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING  
TO FOOD AND DRUGS.**

Three convictions were secured during the month of December, 1912, for selling adulterated food and drugs, as follows:—

No.	Name of Defendant.	Place.	Character of Article sold.
1	Thomas W. Barnes, . . .	Fall River, .	Milk (contained formaldehyde). <sup>1</sup>
2	Alvin L. Dudley, . . .	Weston, . . .	Milk (contained added foreign substance). <sup>1</sup>
3	Henry Siegel Company, . . .	Boston, . . .	Canned herring (decomposed). <sup>1</sup>

<sup>1</sup>Appealed.

Amount of fines imposed, \$150.

## LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR DECEMBER, 1912.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.		
			1	2	3
18589 18591	Standard sour pickles. Standard prepared onions.	The Standard Company, Hartford, Conn., . . .	. . .	. . .	Contained alum.
18654 18655	{ Milk, . . . .	The Standard Company, Hartford, Conn., . . . .	. . . .	. . . .	Contained alum. Solids, 11.82 per cent.; fat, 4 per cent.; contained added water.
q 10146	Milk, . . . .	Frank Moore, Athol, Mass., . . . .	. . . .	. . . .	{ Solids, 11.74 per cent.; fat, 3.9 per cent.; contained added water.
q 10152	Milk, . . . .	Vieira Brothers and Perry, . . . .	. . . .	. . . .	{ Solids, 11.46 per cent.; fat, 3.6 per cent.; contained added water.
		United Fisheries Company, John F. Souza, Manager, Gloucester, Mass., . . . .	. . . .	. . . .	Solids, 11.4 per cent.; fat, 2.4 per cent.; contained added water.

## INSPECTION OF DAIRIES.

During the month of December, 1912, 85 dairies were examined in the following places:—

PLACE.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Avon,	1	1	100.00	—	—
Third inspection,	10	7	70.00	3	30.00
Melrose,	13	5	38.46	8	61.54
Second inspection,	8	2	25.00	6	75.00
Third inspection,	1	—	—	1	100.00
Fifth inspection,	1	1	100.00	—	—
Watertown,	8	4	50.00	4	50.00
Second inspection,	1	—	—	1	100.00
Third inspection,	5	3	60.00	2	40.00
Fourth inspection,	3	2	66.67	1	33.33
Weston,	7	7	100.00	—	—
Second inspection,	3	3	100.00	—	—
Third inspection,	24	18	75.00	6	25.00

Total number of dairies examined, . . . . .	85
Number found to be free from objectionable conditions, . . . . .	53
Number concerning which letters were sent, . . . . .	32
Total number of conditions to which attention was called, . . . . .	117
Percentage of dairies which passed inspection, . . . . .	62.35

In addition to the above, 25 dairies were visited at which the sale of milk had been discontinued.

Included in the total number of dairies visited were 31 which had recently started in the milk-producing business and were inspected for the first time.

The names of the owners of the dairies found to be worthy of commendation follow:—

### AVON.

#### *Class B.*

Anderson, Carl ‡	French, Alpheus ‡	Lothrop, Estate of George ‡ ¶
Emery, Oscar ‡†	Littlefield, Charles ‡ ¶	Mangan, Patrick ‡
	Lothrop, Fred P.	Whiting, Horace ‡

### MELROSE.

#### *Class A.*

Kiley, Robert

#### *Class B.*

Bates, G. H. W.	Lucey, Daniel P.* †	McDonald, Angus A. ¶
Dunn, W. F.	Mann, Frank E.	Schumann, Oscar * †

### WATERTOWN.

#### *Class B.*

Conners, James ‡	Harrington, Everett W. ‡ ¶	Piscateli, Nicholas
Doyle, James	McCafferty, William	Ramsey, Robert ‡ ¶
Lindsey, Robert §	Nugent, Joseph M.	Shanahan, Patrick §

### WESTON.

#### *Class A.*

Ellis, George H.	Schrafft, W. E. ‡ ¶
Merriam, Charles H. ‡ ¶	Walker, Grant ‡ ¶
	Winsor, Robert ‡†

#### *Class B.*

Brown, Mrs. E. J.	Hagar, Jacob F.‡	Sherman, H. A.
Clark, Cyrus H.*	Henderson, George W.	Sibley, George S.‡
Coburn, Arthur E. ‡ ¶	Jones, Mrs. George H.‡	Spear, George L.‡
Coburn, Thomas E.‡	Lamson, G. H. ‡ ¶	Stevens, C. H.
Coolidge, John J.‡	Ogilvie, George	Trask, George E.
Dudley, A. L.* †	Ripley, F. P.‡	Tyler, Sidney E.‡
Green, Edward C. ‡ †	Roberts, L. E.‡	Vittum, Darius B. ‡ ¶
	Russell, H. G.* †	Zoller, Mrs. Henry ‡

\* Second inspection.

§ Fourth inspection.

† Reported favorably on first inspection.

|| Fifth inspection.

‡ Third inspection.

¶ Reported favorably on all previous inspections.

**THE MAINTENANCE OF ISOLATION HOSPITALS BY CITIES AND TOWNS IN MASSACHUSETTS FOR THE RECEPTION OF PERSONS ILL WITH DISEASES DANGEROUS TO THE PUBLIC HEALTH.<sup>1</sup>**

BY THE ASSISTANT TO THE SECRETARY OF THE BOARD.

ACTS OF 1912, CHAPTER 151.

**AN ACT RELATIVE TO THE MAINTENANCE OF HOSPITALS BY CITIES AND TOWNS.**

SECTION 1. Section thirty-five of chapter seventy-five of the Revised Laws, as amended by chapter six hundred and thirteen of the acts of the year nineteen hundred and eleven, is hereby further amended by striking out the said section and inserting in place thereof the following:—*Section 35.* Each city shall, and each town may, and upon the request of the state board of health, shall, establish and maintain constantly within its limits one or more hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health as defined by the state board of health, unless there already exists in the city or town a hospital for the reception of persons ill with such diseases, which is satisfactory to the state board of health, or unless some arrangement which is satisfactory to the state board of health is made between neighboring cities or neighboring towns, or neighboring cities and towns, for the care of persons having such diseases. All such hospitals established and maintained by cities or towns shall be subject to the orders and regulations of the boards of health of the cities or towns in which they are respectively situated. Plans for the construction of the said hospitals shall be approved by the state board of health before the hospitals are constructed, and the state inspectors of health shall annually make such examination of said hospitals as in the opinion of the state board of health may be necessary. A city or town which upon the request of the state board of health refuses or neglects to establish and maintain such a hospital shall forfeit not more than five hundred dollars for each refusal or neglect: *provided, however,* that if, in the opinion of the boards of health of two or more adjoining cities or towns or a city and an adjoining town or towns, such hospitals can advantageously be established and maintained in common, the authorities of the said cities or towns may, subject to the approval of the state board of health, enter into such agreements as shall be deemed necessary for the establishment and maintenance of the same.

<sup>1</sup> Following is the list of diseases declared by the State Board of Health to be dangerous to the public health, and hence notifiable under the provisions of sections 49 and 50, chapter 75, Revised Laws:—

Actinomycosis.	Leprosy.	Tetanus.	Varicella.
Asiatic cholera.	Malignant pustule.	Trichinosis.	Whooping cough.
Cerebro-spinal meningitis.	Measles.	Tuberculosis.	Yellow fever.
Diphtheria.	Scarlet fever.	Typhoid fever.	
Glanders.	Smallpox.	Typhus fever.	
Ophthalmia neonatorum and trachoma were made notifiable on May 6, 1909, and anterior poliomyelitis on Nov. 4, 1909.			

SECTION 2. This act shall take effect upon its passage. [Approved February 24, 1912.

Following is a brief report submitted by State Inspectors of Health, or officials in local communities, on existing provisions or methods relating to the care of persons ill with communicable diseases in need of hospital treatment in the cities of the Commonwealth. Copies of communications between the State Board of Health and city officials relating to the need of hospital provisions are also presented:—

BOSTON. Population, 686,092.

January, 1913.

The Boston Consumptives' Hospital consists of an out-patient department where patients come for treatment and are followed up in their homes by a staff of 25 visiting nurses; a hospital with 150 beds for advanced cases and 50 cottage beds for advanced ambulatory cases. A building to be used for a children's ward with 60 beds is in process of construction and will be ready in July. The day camp connected with the hospital has accommodated as many as from 160 to 175 patients. The isolation hospital, known as the south department, is a part of the Boston City Hospital. There are three pavilions, one for scarlet fever, one for diphtheria and one for measles. There are 125 beds in each of the scarlet fever and diphtheria pavilions and 60 beds in the measles pavilion. The hospital does not accept any cases residing out of the city. Persons having a legal settlement in Boston pay \$7 per week. Cases are sent to the south department by the attending physicians or by the board of health when the isolation of the patient at his home is not satisfactory to the Board.

WORCESTER. Population, 145,986.

January, 1913.

The city of Worcester maintains an isolation hospital, but not a tuberculosis ward or hospital. The foundation of the new tuberculosis hospital is nearly completed. Special effort is to be made to make the hospital attractive and to keep patients contented, and in this way keep the advanced cases under direct supervision. In regard to scarlet fever and diphtheria, it is customary to urge patients ill with such diseases to enter the isolation hospital, although they are not compelled to do so, except in extreme instances. As to co-operating with neighboring towns, the attitude of the local board of health will be to allow such towns to use the isolation and the new tuberculosis hospital, provided the payment of the bill is guaranteed, when there are vacant beds. In case of epidemics in Worcester, the smaller towns must make other provisions for the care of such cases.

FALL RIVER. Population, 119,295.

Dec. 12, 1912.

The isolation hospital, erected and completed in 1910 for such diseases as diphtheria and scarlet fever, was immediately occupied by tuberculosis patients and has been exclusively used by such patients up to the present time. Fifty

beds, the capacity of the hospital, have been at all times fully occupied, leaving a number of the patients to be cared for in their homes or boarding-houses until they can be accommodated at the hospital. A number of patients with tubercular joints have been cared for at the city hospital.

Early in the summer the board of aldermen appropriated sufficient funds to procure a set of sketch plans of a hospital for the exclusive care of patients ill with tuberculosis, with a capacity of over 100 beds, and it is expected that an appropriation will be provided for its erection. If this is accomplished during the coming year, the municipality hopes to use the isolation hospital for the purpose for which it was erected, reserving the old "farmhouse" on Highland Avenue, for patients ill with smallpox, if occasion requires, until the smallpox hospital is rebuilt.

**LOWELL. Population, 106,294.**

March 26, 1912.

"Your letter of March 18, addressed to the mayor of this city, has been handed to me for reply. There is at the present time in Lowell an isolation hospital or 'pest house' for the treatment of smallpox cases. Through the courtesy of the Lowell hospital directors, we have been able thus far to secure accommodations for a limited number of cases of diphtheria and scarlet fever, and there are some half a dozen cases of tuberculosis cared for at the Chelmsford Street Hospital or Almshouse. The remaining cases of tuberculosis are sent to the various State sanatoria or cared for at their homes. The Lowell Guild, a society composed of private individuals, care for cases of tuberculosis, and through their kindness we have been able to secure the services of their nurses in caring for tuberculosis patients at their homes. The dispensary at City Hall furnishes medicine for these cases. A contagious hospital commission has been appointed for the erection of a hospital for the care of diphtheria, scarlet fever, etc., a separate ward to be included for the treatment of tuberculosis patients. At the present time a site for the same has been chosen by the committee, and the adoption of it is under discussion by the municipal council." (Letter to the State Board of Health, signed by the Agent of the Lowell Board of Health.)

Dec. 9, 1912.

"On Dec. 9, 1911, you were notified that the State Board of Health, at the meeting of the Board held on Dec. 7, 1911, requested the city of Lowell to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, relative to the maintenance of isolation hospitals (including tuberculosis hospital or wards). It appears from information received at the office of the Board that little progress has been made as yet in carrying out the request. At a meeting of the State Board of Health held on Dec. 5, 1912, therefore, it was voted that the city of Lowell again be requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of Lowell.)

Dec. 10, 1912.

"It is hardly necessary for me to point out that the presence of an epidemic of scarlet fever in Lowell at this time makes the sending of this (the above) communication peculiarly appropriate. I take this opportunity, therefore, to urge that the authorities of the city of Lowell take immediately the proper steps for securing adequate isolation accommodations for those affected with epidemic diseases, to the end that the present very serious situation in your city be relieved at the earliest possible moment." (Letter from the Secretary of the State Board of Health to the Mayor of Lowell, in part.)

Dec. 13, 1912.

"Your communications of December 9 and 10, relative to the maintenance of an isolation hospital by the city of Lowell, have been received and contents carefully noted. In reply I would state that we have been led to believe that the Legislature is about to consider the proposition of having such hospitals maintained by the State or county, and in anticipation of this fact the city of Lowell has taken no definite action relative to the establishment of such an institution under municipal auspices. The city of Lowell appreciates fully the need of an isolation hospital, but does not believe it to be good policy to erect one at this time if the State or county is to provide others. If the State Board of Health is of the opinion that the Legislature is not to go forward with the proposition, I can assure your honorable body that this city will lose no time in complying with the provisions of the statutes relative to isolation hospitals. In regard to the present epidemic of scarlet fever, I will state that the board of health has made arrangements to secure a very suitable temporary isolation hospital." (Letter to the State Board of Health signed by the Mayor of Lowell.)

## CAMBRIDGE. Population, 104,839.

December, 1912.

A diphtheria hospital established in 1899 with a capacity of 23 beds is maintained by the board of health. All scarlet fever patients requiring hospital treatment are transferred to the Massachusetts Homœopathic Hospital, Boston, contagious-disease department, the board of health having an agreement as to price with this institution. This city established in January, 1908, a tuberculosis hospital with a capacity of 60 patients located on Concord Avenue under the control of the local board of health. This building reached its capacity, and an addition accommodating 30 patients has since been provided by the city government.

## NEW BEDFORD. Population, 96,652.

Dec. 11, 1912.

Patients ill with tuberculosis are cared for at the New Bedford Sanatorium, under the directorship of the local Anti-Tuberculosis Society. The municipality practically supports this sanatorium which is to be greatly enlarged and an infirmary added during the coming year. The city of New Bedford maintains a hospital for diphtheria and scarlet fever patients. During the year 1912 this hospital, up to December 11, has been in active use for the treatment of such

patients, and the prospect of the diphtheria ward remaining open is good for six weeks longer. "The hospital was erected at a cost of about \$40,000. It has two wings with accommodations at the present time for 20 patients in each wing. The administration building is in the center of the plant, and the two wings are connected with this building by a wide corridor fitted with glass, roofed over. The heating plant is about 150 feet away from the administration building, and the heat is carried through a tunnel 6 feet high. In this way the patients and the occupants of the administration building are entirely protected from any danger from fire. The hospital has been in commission since 1906. Since that time it has been used at different times whenever cases arose in which it was impossible for the patients to be properly isolated at their respective homes. The city does not employ a superintendent or a matron or a regular corps of nurses, but it has a caretaker who looks after the property, and during the winter months heat is on in the buildings all the time; and in connection with this the department of health has the services of two nurses who, while not under pay, are ready to take all cases which may come under their direction. This has been the general plan of operating since 1906. During the year of 1911 the hospital was opened one hundred and seventy-one days for cases of diphtheria and scarlet fever. Patients can be removed to this plant at an hour's notice." (Chairman of New Bedford Board of Health.)

Typhoid fever patients sent by the local officials to St. Luke's Hospital are paid for by the municipality. Patients ill with other diseases dangerous to the public health, not provided for as above mentioned, are treated at their homes at the expense of the municipality.

#### LYNN. Population, 89,336.

Oct. 31, 1911. Dec. 6, 1911.

The city of Lynn maintains a hospital for persons ill with diphtheria and scarlet fever. The city also has a building which has been used for the care of persons stricken with smallpox. At the present time a building that was built for a children's home is now being remodeled and adapted for the care of persons ill with tuberculosis. This building will have a capacity of about 70 patients. At the present time the building which has been used for the care of smallpox patients is utilized in connection with the children's home building that is now being remodeled for a tuberculosis hospital. The children's home building was erected in 1881, but the additions recently made for the care of tuberculosis patients included extensive piazza provisions outside of the main building and the remodeling of rooms. The building has been remodeled at an expense of about \$10,000 by the city, and will be under the control of the board of health in addition to the hospital now maintained by the city for persons ill with scarlet fever and diphtheria. Physicians at the Lynn hospital examine patients who they believe have any disease of the lungs on two days each week free of charge.

Jan. 10, 1913.

A hospital for scarlet fever and diphtheria patients has been maintained as usual during the past year. During the early part of July, the building which was remodeled for a tuberculosis hospital was opened and the first patient ad-

mitted on July 8, 1912. This building has a capacity of 60 patients, males being accommodated on the first floor, females on the second floor, with the nurses' quarters located on the third floor of the building. On Jan. 10, 1913, 42 patients were accommodated at the hospital, which shows that such an institution was urgently needed in the city.

**SPRINGFIELD.** Population, 88,926.

Dec. 16, 1912.

This city is sufficiently equipped for all diseases dangerous to the public health in compliance with chapter 151 of the Acts of 1912, but it appears from a visit to the tuberculosis hospital that full use of this institution is not made, because it has been the policy of the board of health to admit only those patients who show a positive sputum. At the time of a visit made in October only 1 female patient was present in the tuberculosis hospital, where there are ample accommodations for from 10 to 12 patients.

**LAWRENCE.** Population, 85,892.

Oct. 9, 1911.

The city of Lawrence maintains a tuberculosis hospital which at the present time appears to have a capacity sufficient to care not only for hospital patients among the residents of Lawrence, but for patients in some of the neighboring towns. The city does not maintain a hospital for the care of persons having other communicable diseases than tuberculosis. Patients, however, are received at the Lawrence General Hospital.

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Lawrence was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having diphtheria, scarlet fever, or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Lawrence.)

Dec. 12, 1912.

"I have your notification of December 9 regarding the maintenance of a hospital in the city of Lawrence for the reception of persons having contagious diseases. The city of Lawrence now owns and maintains a first-class isolation hospital, well equipped and modern in almost every particular, and in view of this fact your letter is not easily understood, unless there is some slight technical violation of the statutes. . . ." (Letter from the Mayor of Lawrence, in part, to the State Board of Health.)

## SOMERVILLE. Population, 77,236.

December, 1912.

This city, in 1905, remodeled a building located at the corner of Broadway and North Street, for the care of cases of scarlet fever and diphtheria. In October, 1910, the city commenced the erection of a tuberculosis ward on land adjoining the contagious disease hospital, and this building was completed and opened for the care of patients in March, 1911. The capacity of the contagious hospital is 35 cases of scarlet fever and 25 cases of diphtheria, and the capacity in the tuberculosis ward, 24 patients. This institution is under the control of the board of health and maintained by an annual appropriation from the city government. Since this hospital has been in operation it has frequently taken patients from outside cities and towns when requested, but no definite agreement has been made with these places, except as to the cost of each patient per week.

## HOLYOKE. Population, 57,730.

Dec. 16, 1912.

This city has erected and has opened for treatment a tuberculosis hospital, accommodating 25 patients. Plans have also been drawn for a scarlet fever and diphtheria ward on a lot of land owned by the city and adjacent to the tuberculosis hospital, which, when completed, will cost in the neighborhood of \$70,000, but no active work has been done to carry these plans into execution. The Associated Charities of the city maintain a clinic, where patients may be examined for tuberculosis, which is open daily from 11 to 12 A.M. and 5 to 6 P.M. There is a temporary hospital of wooden construction, erected about two years ago, which is located near the city hospital. This contains two rooms, each 10 by 12 feet, which may be used for diphtheria and scarlet fever cases when necessary, but it is not practicable to send patients there in the winter time on account of the poor construction of the building, the latter being controlled by the board of health.

Dec. 24, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Holyoke was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having diphtheria, scarlet fever, or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the State Board of Health to the Mayor of Holyoke.)

Dec. 27, 1912.

"I am in receipt of your communication of Dec. 24, 1912, and beg to advise that the same will have our prompt and best attention at a very early date." (Letter from the Mayor of Holyoke to the Secretary of the State Board of Health.)

## BROCKTON. Population, 56,878.

March 27, 1912.

"We have available for smallpox a well-equipped hospital of four rooms, besides bath and pantry; viz., two rooms for patients, nurses' room and kitchen, furnished with city water. The second floor is unfinished, but could be used in an emergency, or could be finished off into four rooms and bath. This building could be used, excepting in freezing weather, for any contagious disease, but it is not in a true sense a properly equipped isolation hospital. . . ." (Letter to the State Board of Health from the Mayor of Brockton, in part.)

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Brockton was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Brockton.)

## MALDEN. Population, 44,404.

Oct. 27, 1911.

The board of health from an appropriation made by the city government three years ago erected a concrete building, for cases of scarlet fever and diphtheria, accommodating 20 patients. This hospital maintained by the board of health receives patients from adjoining cities and towns. Everett, Reading, Melrose, and Winchester frequently send cases for treatment. During the past year the city government appropriated \$12,000 for the erection of a tuberculosis hospital which, it was expected, was to be erected upon grounds adjacent to the hospital for contagious diseases. As the land adjoining, however, was in the city of Melrose, certain residents of Melrose objected to the erection of the hospital. The objection on the part of the Melrose authorities is based on section 39 of chapter 75 of the Revised Laws: "such hospitals shall not be established within one hundred rods of an inhabited dwelling house situated in an adjoining city or town, without the consent of such city or town."

Dec. 19, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Malden was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having tuberculosis, or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Malden.)

Dec. 20, 1912.

" We appeared before the Legislature asking to be given permission to build a tuberculosis hospital on a site on the Melrose line and near our present contagious hospital. This would only cost us a very normal sum, and we could have the same heating apparatus, the same matron, the same firemen, the same janitor, the same purchasing agent for supplies, — all, you might say, under one roof. . . . If you are able to compel the city of Melrose to give us permission to build near our present contagious hospital, on land owned by the city, we will have a tuberculosis hospital built in less than six months, but we do not feel, under the circumstances, that we can spend \$5,000 for a lot where it will require thousands of dollars to bring to the building water, gas, electricity and sewerage. . . ." (Letter to the State Board of Health from the Mayor of Malden, in part.)

## HAVERHILL. Population, 44,115.

December, 1912.

At present there are under construction, two hospitals, one for tuberculosis with a capacity of 22 patients, and one for other diseases dangerous to the public health with a capacity of 32 patients. The building for patients ill with such diseases as diphtheria and scarlet fever is being erected by the city in conjunction with the trustees of the Hale Hospital.

## SALEM. Population, 43,697.

Jan. 10, 1913.

The building remodeled last year for a tuberculosis hospital is located away from the thickly populated part of the city on a point of land which overlooks the harbor. During the past year the hospital accommodations for tuberculosis patients have been continued in this building, which has a capacity of 16 patients on the first floor, and a capacity of 20 patients on the second floor, for tuberculosis cases. A day camp has also been maintained by the Anti-Tuberculosis Society from May 1 to October 10, on grounds adjacent to the tuberculosis hospital.

## NEWTON. Population, 39,806.

Dec. 18, 1912.

" By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Newton was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of the hospitals for the reception of persons having tuberculosis, or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Newton.)

Dec. 21, 1912.

" Your letter of December 18, notifying me that at a meeting of your Board held on December 5 the city of Newton was requested to comply with chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception

of persons having tuberculosis, or other diseases declared by the State Board of Health to be dangerous to the public health, at hand. I will take this matter up with the board of health of the city of Newton." (Letter from the Mayor of Newton to the State Board of Health.)

January, 1913.

The city of Newton has a hospital for contagious diseases other than tuberculosis. Patients with tuberculosis may be sent to the isolation hospital, and in some instances be cared for there, or remain pending departure for some State sanatorium.

**FITCHBURG.** Population, 37,826.

December, 1912.

A tuberculosis hospital is now under construction at a contract price of \$23,000 on the grounds of the Burbank Hospital. This hospital will accommodate 28 patients. The Society for the Prevention and Control of Tuberculosis maintains a clinic on each Saturday afternoon from 2.30 to 5 o'clock, with an average attendance of 4. There is a hospital for patients ill with smallpox, but none for diphtheria or scarlet fever patients. The Fitchburg board of health recognizes the need of an isolation hospital and would like very much to see one built.

Dec. 16, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Fitchburg was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having diphtheria, scarlet fever, or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Fitchburg.)

Dec. 21, 1912.

"Acknowledging your communication of December 16, I will say that same will be presented to the city council for its consideration at the first meeting in January." (Letter from the Mayor of Fitchburg to the State Board of Health.)

**TAUNTON.** Population, 34,259.

Dec. 29, 1911.

In October, 1911, the board of health sent a communication to the city council to consider the matter of an isolation hospital, including provisions for patients ill with tuberculosis. The need was also explained to the finance committee. Local opinion was to the effect that it would not be practical for the city to enter into any agreement with neighboring towns. It was generally conceded, however, that a tuberculosis hospital was needed for Taunton.

Dec. 9, 1912.

"On Sept. 9, 1912, you were notified that the State Board of Health, at the meeting of the Board held on Sept. 5, 1912, requested the city of Taunton to

establish and maintain an isolation hospital in accordance with the provisions of chapter 151 of the Acts of 1912.

"It appears from the information received at the office of the Board that little progress has been made as yet in carrying out the request. At a meeting of the State Board of Health, held on Dec. 5, 1912, therefore, it was voted that the city of Taunton again be requested to comply with the provisions of chapter 151 of the Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of Taunton.)

Dec. 12, 1912.

"Your communication of the 9th inst., is entirely unnecessary. Upon receipt of the former communication of Sept. 9, 1912, I immediately presented the same to the municipal council, and it was referred to the proper committee, as is customary in such cases. After consideration certain steps were authorized and directed and a report has been made. This is a matter that must be worked out in a careful manner, not only financially but otherwise, and I shall insist upon a reasonable length of time in solving the problem." (Letter from the Mayor of Taunton to the State Board of Health.)

#### EVERETT. Population, 33,484.

Jan. 10, 1913.

During the past year this city has made no change in the building which it owns and which was primarily bought for a smallpox hospital, but which could easily be changed into a scarlet fever and diphtheria hospital. This city during the past year has frequently sent cases of scarlet fever and diphtheria to the Malden Contagious Hospital for treatment, and cases of tuberculosis to the Somerville Tuberculosis Hospital, but it would seem necessary that the city should provide such accommodations within its own limits.

Dec. 9, 1912.

"On April 9, 1912, you were notified that the State Board of Health, at the meeting of the Board held on April 4, 1912, requested the city of Everett to establish and maintain constantly within its limits a hospital for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases dangerous to the public health, as defined by the State Board of Health, in accordance with the provisions of chapter 151 of the Acts of 1912.

"It appears from information received at the office of the Board that little progress has been made as yet in carrying out the request. At a meeting of the State Board of Health, held on Dec. 5, 1912, therefore, it was voted that the city of Everett again be requested to comply with the provisions of chapter 151, Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of Everett.)

#### QUINCY. Population, 32,642.

December, 1911.

{ The board of health of the city of Quincy has been sending many patients with contagious diseases to the Massachusetts Homœopathic Hospital, costing the city over \$5,000 last year. There is a decided feeling in the community

that steps should be taken toward the establishment of an isolation hospital. Some years ago the trustees of the city hospital offered to give the city a piece of land for the establishment of a contagious hospital. The matter fell through because of inability to agree upon details of administration. A tuberculosis camp which can accommodate 10 permanent patients was established two years ago by the local anti-tuberculosis society at a cost of about \$3,500. The city made arrangements with the camp to take care of their tubercular patients. Under the existing arrangement, it will be noted that the city of Quincy is not entitled to the subsidy of \$5 per week.

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board, held on December 5, the city of Quincy was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Quincy.)

Dec. 13, 1912.

"I hereby acknowledge receipt of your communication of December 9, and would say I have turned the matter over to the board of health with the request that they take the matter up with you." (Letter from the Mayor of Quincy to the State Board of Health.)

#### CHELSEA. Population, 32,452.

January, 1913.

Previous to the Chelsea fire of 1907, the Frost Hospital in Chelsea had wards for the isolation of scarlet fever and diphtheria. The hospital was destroyed by the fire and has been rebuilt, but without provisions for isolation wards. The Chelsea board of health, recognizing the need of an isolation hospital and tuberculosis hospital, has been agitating the question for over two years. In the fall of 1911 the matter was brought to the attention of the Board of Control, who had an architect make plans for the erection of an isolation hospital by the city on land adjoining the Frost Hospital. It was proposed to turn the hospital over to the trustees of the Frost Hospital, and run it in conjunction with the general hospital. When the Board of Control went out of office in January, 1912, the plans were turned over to the incoming mayor. Nothing was done during 1912. The city has a hospital for patients ill with smallpox.

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Chelsea was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having diphtheria,

scarlet fever, tuberculosis or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Chelsea.)

PITTSFIELD. Population, 32,121.

October, 1911.

The only isolation hospital established by the city is a building on the poor farm, used for persons stricken with smallpox.

Dec. 9, 1911.

"By vote of the State Board of Health, at the meeting of the Board held on December 7, the city of Pittsfield is requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, relative to the maintenance of isolation hospitals (including tuberculosis hospital or wards)." (Letter from the Secretary of the State Board of Health to the Mayor of Pittsfield.)

Dec. 17, 1912.

"The city has in operation an arrangement with the Pittsfield Anti-Tuberculosis Association of Pittsfield, a Massachusetts corporation, to care for city patients. The local association will by spring have over \$20,000 invested, and will have a first-class hospital in every respect. The plans and work of the association have, I understand, the approval of the inspector or physician of your Board. Relative to a contagious-disease hospital the city is still depending on its old hospital building situated on our town farm. This building is in good shape, has heat and running water and is ready for occupancy on short notice. I am now negotiating with the House of Mercy corporation of this city, hoping that the city can join with the corporation in the establishment of a new contagious-disease hospital on land owned by the corporation, said hospital to be made available for both pay and public patients." (Letter from the Mayor of Pittsfield, in part, in response to a request from the State Board of Health.)

WALTHAM. Population, 27,834.

December, 1912.

With the exception of smallpox, all cases of dangerous diseases are cared for at the Waltham hospital. Cases of smallpox are cared for in a small building owned by the city. Recently the hospital has made arrangements to care for cases of tuberculosis, and at the present time has a capacity of 16 patients who are accommodated in open-air pavilions, with a roof, open on all sides but screened and protected by awnings when necessary. Four other rooms formerly used as a maternity ward are now available for patients who are not able to be out of doors all of the time.

Although this city does not technically comply with the law, patients with tuberculosis are cared for at the Waltham Hospital, where proper facilities have been provided. It does not seem necessary, while the Waltham Hospital is maintaining a tuberculosis hospital which appears adequate for present needs, for the city through its board of health to maintain another one.

## CHICOPEE. Population, 25,401.

Oct. 21, 1911. January, 1912.

A manufacturing city with a large foreign population. Has no hospital of any sort. The general hospital work goes to Springfield or Holyoke hospitals. Infectious cases have been taken to the isolation hospital in Springfield. The agent of the board of health stated that a contagious-disease hospital would be much used, but that he believed a tuberculosis hospital which would take care of persons in the advanced stage of the disease would do the most good. He stated that it was inhuman in many instances to take such patients away from their home surroundings, and that a hospital in their own town would solve the problem. It was the consensus of local opinion that the city needed an isolation hospital including a tuberculosis hospital.

Dec. 9, 1911.

"By vote of the State Board of Health, at the meeting of the Board held on December 7, the city of Chicopee is requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, relative to the maintenance of isolation hospitals (including tuberculosis hospital or wards)." (Letter from the Secretary of the State Board of Health to the Mayor of Chicopee.)

At the present time there is under construction by the city an isolation hospital, including a tuberculosis ward, which is located about two miles from the city and about one mile from a street car line, on land well situated, and which when completed will cost about \$22,000. This hospital will accommodate 12 cases of tuberculosis, 8 to 10 cases of scarlet fever and diphtheria, each, with additional rooms for other dangerous diseases as they occur. This hospital is of brick construction, two stories in height, with a basement, and it is expected that it will be ready for occupancy in July, 1913. It is planned to care for the scarlet fever patients in four rooms, located on the first floor of the main building, and the diphtheria patients on the second floor of the main building, with the tuberculosis wards on either side, each accommodating 6 patients, one side being used for males and the other for females.

## GLOUCESTER. Population, 24,398.

December, 1912.

The city of Gloucester has a hospital for the care of persons stricken with smallpox. The Overseers of the Poor maintain a small hospital of 12 beds at the city almshouse for the care of poor patients in the city, and from time to time a few cases of tuberculosis are cared for there. During 1912, there were 15 cases of tuberculosis reported, with 23 deaths. Otherwise, there are no provisions made by the city or by the board of health for the care of persons ill with diseases dangerous to the public health.

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board, held on December 5, the city of Gloucester was requested to comply with the provisions

of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Gloucester.)

Dec. 18, 1912.

"Your communication of December 9 was presented to the municipal council at their regular meeting on December 17. The local board of health are investigating the matter and will probably report to the next government to see what can be done." (Letter from the City Clerk of Gloucester in answer to the letter from the Secretary of the State Board of Health to the Mayor of Gloucester.)

#### MEDFORD. Population, 23,150.

December, 1912.

The city of Medford has no hospital for the care of persons ill with scarlet fever and diphtheria, but frequently sends such patients to the Somerville Hospital for treatment. A tuberculosis clinic was maintained for about three years. The board of health furnished a room for the examination of patients, which was conducted by three of the physicians in the city. The clinic has for some time been discontinued. At the present time the city is divided into three districts, and patients ill with tuberculosis are treated at home by physicians under the direction of the anti-tuberculosis committee, who have an office at 14 Salem Street. The committee also employ a visiting nurse who visits the patients at their homes. While the work is not under the direction of the board of health, one of the attending physicians is a member of the board of health, and the tuberculosis committee are in constant touch with said board.

#### NORTH ADAMS. Population, 22,019.

December, 1911.

The city of North Adams has a general hospital under private management, but needs in addition a hospital for contagious diseases. As to whether the city should establish and maintain a hospital in common with neighboring towns, local sentiment is divided. Many persons oppose such an arrangement because of apprehended difficulties as to location, apportionment of expense and management. Other persons, on the other hand, recognize the advantage of sharing expenses. Some persons favor building under the present hospital management.

April 13, 1912.

"Your communication to his honor, the mayor, under date of March 18, 1912, was transmitted to the city council on April 2, current, and by it referred to a special committee. The subject of a hospital for contagious diseases has been considered in a way at various times for several years, but no definite action has ever resulted therefrom. It is the purpose of this committee to proceed with due deliberation, but with the intent to accomplish the erection of an isolation hospital in conformity with chapter 151 of the Acts of 1912. . . . While it is

desired to erect one that will meet the requirement, it also wishes to keep within reasonable bounds as to expense, both in construction and future maintenance." (Letter, in part, from the Chairman of the Committee in answer to a letter from the State Board of Health to the Mayor of North Adams.)

May 7, 1912.

"On Dec. 9, 1911, the city of North Adams was requested to comply with the provisions of section 35 of chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, in relation to the maintenance of isolation hospitals (including a tuberculosis hospital or tuberculosiis wards).

"I am informed that little progress has been made in your city toward acceding to this request. I beg, therefore, to call to your attention once more the above-mentioned law, as amended by chapter 151 of the Acts of the year 1912, and to urge that steps be taken looking toward the establishment of a hospital as required by the provisions of the above-mentioned statute." (Letter from the Secretary of the State Board of Health to the Mayor of North Adams.)

May 9, 1912.

"Referring to the isolation and tuberculosis hospital, I wish to say that I referred your communication to the city council on April 2, 1912, at which time a special committee was appointed. They have been working on the matter ever since." (Letter, in part, from the Mayor of North Adams to the State Board of Health.)

Dec. 16, 1912.

"On Dec. 9, 1911, you were notified that the State Board of Health, at the meeting of the Board held on Dec. 7, 1911, requested the city of North Adams to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, relative to the maintenance of isolation hospitals (including tuberculosis hospital or wards). It appears from information received at the office of the Board that while progress has been made in carrying out the request, the transactions as regards provision for tuberculosis patients are not completed to such an extent as to permit the matter to be presented to the city council for action. It appears, also, that action with reference to provisions for communicable diseases other than tuberculosis, such as diphtheria, scarlet fever, etc., has not been actively pushed. At the meeting of the State Board of Health held on Dec. 5, 1912, therefore, it was voted that the city of North Adams again be requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of North Adams.)

There is no anti-tuberculosis society in this city, but the board of health aid such patients as come to their attention, at the present time two being thus cared for. The city physician attends the poor patients at home, and the agent of the board of health visits all cases reported upon and issues instructions to them. A committee from the city council have the erection of an isolation hospital,

including a tuberculosis ward, under consideration and have visited some places and studied the situation thoroughly, but they have not reported any action to the city council.

NORTHAMPTON. Population, 19,431.

Dec. 18, 1912.

"On Dec. 9, 1911, you were notified that the State Board of Health, at the meeting of the Board held on Dec. 7, 1911, requested the city of Northampton to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, relative to the maintenance of isolation hospitals. It appears from information received at the office of the Board that little progress has been made as yet in carrying out the request. At a meeting of the State Board of Health held on Dec. 5, 1912, therefore, it was voted that the city of Northampton again be requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of Northampton.)

The Dickinson Hospital trustees have provided accommodations at the Dickinson Hospital for patients ill with scarlet fever and diphtheria to the extent of 40 patients in wards and private rooms. These wards are used only when necessary, are maintained by the trustees of the hospital, and a regular price is charged for those who receive such treatment. There are no accommodations for tuberculosis patients, but a plan is under way for a bill to be introduced into the Legislature for a county hospital for such patients. No dispensary exists in the city, and from information obtained it is not apparently needed.

BEVERLY. Population, 18,650.

December, 1912.

At present there are at the City Hospital accommodations for three persons having tuberculosis, but there are no provisions of any kind for persons ill with other diseases dangerous to the public health. During the year 14 cases of scarlet fever and diphtheria were sent to the Lynn Hospital for treatment.

Dec. 18, 1912.

"On July 19, 1912, you were notified that the State Board of Health, at the meeting of the Board held on July 11, 1912, requested the city of Beverly to comply with the provisions of chapter 151 of the Acts of 1912, relative to the maintenance of isolation hospitals in cities and towns. It appears from information received at the office of the Board that little progress has been made as yet in carrying out the request. At a meeting of the State Board of Health held on Dec. 5, 1912, therefore, it was voted that the city of Beverly again be requested to comply with the provisions of chapter 151, Acts of 1912." (Letter from the Secretary of the State Board of Health to the Mayor of Beverly.)

Dec. 27, 1912.

"Replying to your communication of the 18th inst., relative to isolation hospital in the city of Beverly, will say that on July 22 the mayor sent a communication to the board of aldermen which was referred to the committee on finance and appropriations. They reported on September 23, and a special committee was appointed to consider the matter. On December 16 the special committee reported to the board of aldermen, recommending that the subject-matter be referred to the next board of aldermen. . . ." (Letter from the Mayor of Beverly, signed by the Mayor's Clerk, to the State Board of Health.)

## MELROSE. Population, 15,715.

Oct. 27, 1911.

The city of Melrose has a hospital of wooden construction which was erected about ten years ago and accommodates normally 5 cases under the control of the board of health, but it is not frequently used unless 3 or more cases need hospital treatment at the same time. When this hospital is not maintained, cases of scarlet fever and diphtheria are transferred to the Malden hospital for treatment. Cases of smallpox have been cared for in an adjoining building. For the treatment of tuberculosis a tuberculosis league was organized about three years ago which furnishes medical attendance to such cases at their homes, and a physician is authorized by the board of health to attend such cases and to give them financial and material aid when necessary.

March 27, 1912.

"With respect to isolation hospitals, I beg leave to say that the Board has two small buildings as an isolation hospital. Cases of smallpox, scarlet fever, diphtheria, measles and tuberculosis have been taken care of there at various times for the past twelve years. Since 1906, when the Malden Isolation Hospital was opened, the Board has taken care of a considerable number of cases of diphtheria and scarlet fever at this hospital. Cases of typhoid fever coming under the care of the Board are maintained at the Melrose Hospital. Cases of tuberculosis, desiring treatment, have been sent to the various State hospitals at the expense of the board of health. Melrose is not a large city, it has not a large mill population, and its tuberculosis problem is not so serious as that of some communities. Pending the opening of a new Melrose hospital, the Board has not deemed it wise to take up the question of building a tuberculosis hospital. . . ." (Letter, in part, from the Chairman of the Melrose Board of Health, to the Mayor of Melrose, in reply to letter from the State Board of Health.)

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Melrose was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having tuberculosis

or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Seeretary of the State Board of Health to the Mayor of Melrose.)

WOBURN. Population, 15,308.

December, 1912.

The city of Woburn sends patients ill with contagious diseases to Malden. The eity has a building erected for smallpox that never has been used.

Dec. 9, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on Deeember 5, the city of Woburn was requested to eomply with the provisions of seetion 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Aets of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reeception of persons having smallpox, diphtheria, searlet fever, tuberculosis or other diseases deelared by the State Board of Health to be dangerous to the public health." (Letter from the Seeretary of the State Board of Health to the Mayor of Woburn.)

NEWBURYPORT. Population, 14,949.

December, 1911.

Faeilities are provided by an anti-tuberculosis society for the examination and treatment of persons ill with tuberculosis. In addition shacks have been erected and tents provided at the homes where patients live. It is believed that through private bequest the anti-tubereulosis league will soon be in possession of a sum of money sufficient to establish and maintain a hospital of 12 beds for persons ill with tubereulosis. The municipal authorities and the board of health wish to avail themselves of this hospital when built.

December, 1912.

The eity of Newburyport has no hospital provisions, either municipal or private, for the care of persons ill with tubereulosis or other diseases dangerous to the public health.

Dec. 14, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on Deeember 5, the city of Newburyport was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613 of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reeception of persons having smallpox, diphtheria, searlet fever, tuberculosis or other diseases deelared by the State Board of Health to be dangerous to the public health." (Letter from the Seeretary of the State Board of Health to the Mayor of Newburyport.)

MARLBOROUGH. Population, 14,579.

Dec. 18, 1912.

"By vote of the State Board of Health, at the meeting of the Board held on December 5, the city of Marlborough was requested to comply with the provisions of section 35, chapter 75 of the Revised Laws, as amended by chapter 613

of the Acts of 1911, as further amended by chapter 151 of the Acts of 1912, relative to the maintenance of hospitals for the reception of persons having smallpox, diphtheria, scarlet fever, tuberculosis or other diseases declared by the State Board of Health to be dangerous to the public health." (Letter from the Secretary of the State Board of Health to the Mayor of Marlborough.)

January, 1913.

The board of health of the city of Marlborough report that there is on a hill on the outskirts a building originally intended for a smallpox hospital which has never been used. It contains two ward rooms, two nurses' rooms, kitchen, bathroom and heating plant. Within twenty-four hours this building, it is said, could be put in condition to receive patients ill with any contagious disease if it was deemed necessary.

### TUBERCULOSIS AND THE SCHOOLS.<sup>1</sup>

By ARTHUR TRACY CABOT.

Proper measures for the prevention and control of tuberculosis among school children should not only be addressed to the protection of children during their school life, and to the cure of those who have active tuberculosis, but should also aim at the education of all children in the essential facts of hygiene and, so far as possible, in the cultivation of habits of living that will protect them in later life.

The present paper does not deal with the educational side of this work, except so far as it is inseparably bound up with the care of children already ailing or actively tuberculous.

The consideration of the best methods of handling tuberculosis demands an appreciation of the habits and characteristics both of the disease and of the patients. At the outset we must remember that if every existent case of tuberculosis could be hunted up and put in quarantine, the practical elimination of the disease could be confidently expected in the lifetime of one generation. But such thoroughness is humanly impossible. The people would not put up with a quarantine of such dimensions, and it would never be possible to find the cases if the patients feared being shut up.

Many communities are, however, educated to the point of a partial understanding of the dangers of the disease and the need of reasonable precautions. They are ready to accept a separation of tuberculous school children from well children, and I propose to consider various plans for bringing this about.

The situation is, briefly, that the State insists upon and enforces attend-

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<sup>1</sup> Reprinted from "The Atlantic Monthly" for November, 1912.

ance at school during the growing years of the child, and in so doing tacitly assumes responsibility that the child does not suffer any harm by reason of this school attendance. It is then the duty of the community to safeguard the health of school children as far as lies in its power. This responsibility and this duty are reflected in legislation requiring public schools to conform to certain requirements in buildings and sanitary arrangements, and to provide proper inspection of their pupils to protect them from the needless spread of contagious diseases.

It is obvious that the responsibility thus already recognized requires that cities and towns should devise some way in which the tuberculous children may be kept from contact with the well.

In approaching this problem the school authorities find themselves confronted by two classes of children. First, children who are anaemic, rundown and under-nourished; in whom no signs of tuberculosis can be detected, but whose condition suggests latent tuberculosis. The disease appears so frequently in children of this class that they are frequently spoken of as in the pre-tubercular stage of the disease. Second, those who are actively tuberculous and in whom the disease can be positively diagnosed.

Children in the first of these classes are not dangerous to other children. They can associate intimately with the well children, but they are liable at any time to become actively tuberculous, and therefore dangerous. Life in the open air has proved its usefulness in restoring to health both adults and children who are debilitated, and in many places this class of children has been provided with out-of-door schools and with open-air rooms.

The out-of-door treatment of these children is no longer an experiment; it has been fully tried in many places and has abundantly proved its usefulness. These trials have demonstrated that the condition of health is greatly bettered, and have shown that the mental capacity of the children and their ability to learn their lessons are quite surprisingly increased. It has been found that these children in the open air accomplish their tasks with less hours of study than children in like grades who are studying in closed rooms.

This experience ought to open the eyes of school authorities to their shortcomings in the matter of school ventilation, and the benefits of this discovery should be felt through the whole school system.

In addition to this provision of proper surroundings for these weakling children it has not been unusual for school committees to supply a lunch, and sometimes also to supply warm coverings to needy and scantily clothed children during school hours in cold weather. These are both necessary adjuncts to the treatment of these under-nourished children, though the

difficulty and expense of providing them has deterred many communities from establishing open-air schools. The food thus provided and the needed extra wraps should manifestly be paid for by well-to-do parents, who are able to pay for the medical and other care of their children's health. It is equally certain that they should be in some way supplied to children whose parents are unable to pay for the medical aid they need, and who, for other forms of medical assistance, resort to dispensaries and public hospitals.

It has been objected that this is a forward step in socialism, and this is undoubtedly true; but is that a valid objection? Compulsory education was a forward step in the same direction, and has the world regretted that? This proposed advance in the care of the children whose education the State has assumed, is a measure for the protection of the community, for the improvement of its health, for the limitation of an insidious disease, and as such it is a proper measure for which to spend the public money.

The distribution of this help should, of course, be arranged in such a manner that there should be as little pauperizing effect as possible on the recipients of the community's bounty, but it would not be a startling innovation in a community supplying free school-books. To reduce the pauperizing effect to a minimum it might be well, whenever it could possibly be arranged, to have the parents pay a small sum for the lunches.

The children who are given this extra care in the schools would naturally be under the especially careful watch of the school nurses. The nurses would follow them to their homes and would thus have the opportunity to see the home conditions, and discover how these had contributed to bring on the debilitated condition, and to advise the parents and assist them to correct any hygienic mistakes.

The out-of-door school, then, in order to produce the best results, should be supplemented by a good system of inspection by nurses.

What is an out-of-door school, and how far does an open window or windows fulfill the necessary conditions?

We find many ventilating engineers who claim that by carefully adjusted apparatus, with forced draughts through apertures whose capacity has been arranged by close calculation, a better quality of air can be provided than by any system of open windows. These claims are based on the supposition that the prime requisite is to supply a calculated amount of unused and fresh air and to remove air that has been used. Their test of the quality of the air in a room is the proportion of CO<sub>2</sub>.

Unfortunately very little is known as to those characteristics of air which make it wholesome and stimulating. We know that temperature, humidity, and motion have much effect in determining whether air is agreeable and healthful. We know, too, that the amount of CO<sub>2</sub> in air is not an unfailing guide as to its quality in these respects.

Out of the obscurity which clouds this subject one fact emerges with tolerable clearness, and that is that out-of-door air has a healthful quality which confined air never has, no matter how carefully compounded. A man who has been living out of doors notices a stuffiness in the air of a room with all the windows open. There is some quality of freshness and stimulation in the open that is lost in confined spaces. On a summer's evening, after a hot day, compare the air on an open piazza with that inside the house, and consider the length of time it takes for the cool evening air to penetrate and displace the hot stagnant air within a house with every window open.

By such a comparison as the above we shall be convinced that an out-of-door school has advantages over a room with all the windows open, and that we should aim at a thoroughly out-of-door arrangement, one which can be protected from violent wind and rain, but the leeward sides of which shall at all times be fully open. When the best arrangement cannot be provided, rooms with all of the windows open should be used. Such rooms will be of little use, however, unless they are in charge of teachers who are intelligent advocates of open air, for otherwise the slightest severity of the weather brings a closing of the windows.

The open-air school will act as a strong preventive measure against tuberculosis, and, by improving the health of the under-nourished, will check the development of many cases. It will thus cut down the numbers of the other class we have now to consider, namely, the active, "open," contagious class.

It is quite clear that the children with open communicable tuberculosis should be separated from the healthy children for two reasons. First, because the community is responsible for the reasonable protection of the children whom it forces to attend school. With our present knowledge of tuberculosis it is almost a criminal disregard of this responsibility to allow tuberculous cases to herd with well children in our schoolrooms.

Secondly, these children should be segregated on their own account. They need an even more rigidly conducted open-air treatment than do the debilitated children. They need extra feeding. They need a careful regulation of their work and rest-hours under the guidance of a physician, and the constant care of trained nurses experienced in tuberculosis. They must be carefully taught the precautions needed to prevent their giving the disease to others. In short, they need hospital care and treatment, and their teaching and study must be regarded as of secondary importance.

How can this care and supervision be most effectively and, at the same time, most economically provided?

Here we come to a point in our problem where the human element must be considered. It is quite plain that if all of these children could be collected

in hospitals this would give the best sort of isolation of the disease. Unhappily, however, the parents, as a rule, will not send their children away from home, and without their co-operation this kind of quarantine is impossible.

Facing a problem of this kind, the Boston Association for the Relief and Control of Tuberculosis established an outdoor camp, where the children pursued their studies, and at the same time were under the care of doctors and nurses. From this beginning was gradually evolved the Boston Hospital School, which, through the help of the park commission, was comfortably housed in Franklin Park. The experiment proved so successful that (through the combined action of its school committee and its consumptives' hospital trustees) the city of Boston presently took the school under its charge and placed the responsibility for its management in the hands of the consumptives' hospital trustees, thus recognizing that this institution was a hospital rather than a school.

I do not propose here to consider the details of treatment at this hospital school. It was practically a day camp, at which the children were occupied with study only so far as was thought good for their health. Many parents approved the plan and sent their children, so that, although the school was situated on the outskirts of the city, the attendance was satisfactory. The children did well. The nurses, trained in tuberculosis work, followed them to their homes, and were able in this way to exert some influence upon their home surroundings, obtaining for them better care and diminishing as far as possible the infection of those around them.<sup>1</sup>

On the 31st of January, 1911, the Boston Consumptives' Hospital trustees closed the school, thus putting an end to this pioneer work which had met with the approval of competent persons in all parts of the country, and which had taken a large number of tuberculous patients out of the public schools and had cared for them under conditions which reduced the risk of infection in the community to a minimum.

The chairman of the board, who cast the deciding vote which closed the school, when asked how these patients were to be cared for after the closure of the school, said, "At day-camps and hospitals," and declared that it was the intention of his trustees so to provide for them. Under these circumstances it is interesting to know what became of these patients after they were turned out of the hospital school. Drs. Locke and Murphy made an investigation and were able to trace 156 out of the 174 cases treated at the school during the year previous to its closure. Of these cases just 19 or 10.91 per cent., went to day-camps or hospitals; 91, or 58.33 per cent.,

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<sup>1</sup> An excellent account of the work in this school is contained in the paper by Dr. James J. Minot and Miss Hyams, published in the fifth annual report of the American Association for the Study and Prevention of Tuberculosis. Later, in the "Boston Medical and Surgical Journal," August, 1911, Dr. Edwin A. Locke and Dr. Timothy J. Murphy published a very careful study of the work and its results.

went back into the public schools; 4, or 2.56 per cent., had died; and the remaining 42 patients, or 26.92 per cent., had gone back into the community.

These figures give a striking illustration of the far greater usefulness to the community of a hospital school than of a day-camp or hospital. Only a little more than 10 per cent. of the children whose parents are willing to have them attend a hospital school are willing to let them go to day-camps and hospitals. The large proportion of these cases which went back into the public schools, at the risk of infecting well children, is sufficient basis for a serious indictment of the city government that subjects well children, put under its care, to such unnecessary risks. The results of this experience should convince any fair observer that the hospital school is the most efficient means as yet discovered for safely handling tuberculous school-children. In a large city several hospitals of this type should be supplied and so placed as to be accessible to the school population.

We have hitherto considered the means at our disposal of caring for the children threatened or affected with tuberculosis, after they have been discovered. Obviously, any plan to this end, must have its foundation in a thoroughly satisfactory system of school inspection.

I cannot here discuss the details of school inspection, for these must vary according to local conditions. In large cities the task is a large one, and since a large proportion of the children belong to a class in the community who do not employ a family physician, school physicians must play a considerable part in any complete scheme. Even, however, in large places it has been found by increasing experience that more and more of the work can safely be delegated to nurses. So far as this work has to do with the early discovery of tuberculous children many experienced physicians, expert in this class of work, feel a greater reliance upon the school nurse than upon the school physician. While the final decision as to the existence of tuberculosis must be made by a physician, it is the watchful nurse, constantly among the children, who usually first discovers that the child is out of health and needs attention, and so brings the case to the physician for thorough examination. Many of the cases which come under the head of anaemic, debilitated children, show no signs of definite disease and the close watchfulness of the nurse is more likely to discover children in this class than the cursory observation of a school physician passing his eye rapidly over many children.

In conclusion, then, it appears that a safe system of care for tuberculous children in the schools is a duty that the public assumed when it made school attendance compulsory. That duty the school authorities cannot evade. They should face it squarely.

Any proper plan for handling tuberculosis must rest on a thorough and efficient system of school inspection. Every school should have provision

for out-of-door study for all of its debilitated children. These children should have extra feeding. This is a medical necessity of the case. Whether this food should be supplied by the parents, by some outside charitable source, or by the town, is a question which must be settled according to the circumstances of each case, but the settlement should not be shirked.

Children having active tuberculosis should be separated from the other children, and should be cared for as sick children.

The most efficient plan for accomplishing this last-named object in cities of considerable size is the hospital school, and in a large city such schools should be provided in different sections of the city so that the children shall not have far to go from their homes.

#### COMMON DRINKING CUPS AND COMMON TOWELS.

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Final date for compliance with amendments of Oct. 30 and Dec. 9, 1912, to the Interstate Quarantine Regulations:—

1912.

Department Circular No. 59.  
Public Health Service.

TREASURY DEPARTMENT,

OFFICE OF THE SECRETARY,  
WASHINGTON, Dec. 19, 1912.

*To Medical Officers of the Public Health Service, State and  
Local Health Authorities and Others concerned:—*

The final date for compliance with paragraphs 13 and 14, Article 3, General Regulations, Interstate Quarantine Regulations, is hereby fixed at March 1, 1913.

The paragraphs in question read as follows:—

PARAGRAPH 13.—Common carriers shall not provide in cars, vehicles, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any drinking cup, glass, or vessel for common use: *provided*, That this regulation shall not be held to preclude the use of drinking cups, glasses, or vessels which are thoroughly cleaned by washing in boiling water after use by each individual, nor shall it be held to preclude the use of sanitary devices for individual use only.

PARAGRAPH 14.—Common carriers shall not provide in cars, vehicles, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any towel for use by more than one person: *provided*, That towels may be used again after having been sterilized with boiling water.

FRANKLIN MacVEAGH,  
*Secretary.*



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